IN TWO SECTIONS

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January, 1951

EDISON ELECTRIC INSTITUTE BULLETIN

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PUBLISHED MONTHLY BY EDISON ELECTRIC INSTITUTE

ELECTRICAL RESEARCH STATISTICS
THE ELECTRIC LIGHT AND POWER INDUSTRY

Current Statistical Data Covering 100 Per Cent of Industry

September, 1949-1950

SOURCE AND DISPOSAL OF ENERGY—MONTH OF SEPTEMBER

	1950	1949	%
GENERATION* (Net)			
By Fuel Burning Plants	20,230,587,000	16,934,383,000	+19.5
By Water Power Plants	7,543,449,000	6,975,040,000	+ 8.1
Total Generation	**27,774,036,000**	**23,909,423,000**	**+16.2**
Add—Net Imports Over International Boundaries	88,880,000	65,487,000	+35.7
Less—Company Use	112,583,000	115,022,000	− 2.1
Less—Energy Used by Producer	621,346,000	377,835,000	+64.4
Net Energy for Distribution	**27,128,987,000**	**23,482,053,000**	**+15.5**
Losses and Unaccounted for	2,972,303,000	2,604,189,000	+14.1
Sales to Ultimate Customers	**24,156,684,000**	**20,877,864,000**	**+15.7**

CLASSIFICATION OF SALES

NUMBER OF CUSTOMERS—As of September 30th			
Residential or Domestic	37,062,290	34,916,859	+ 6.1
Rural (Distinct Rural Rates)	1,585,054	1,777,074	−10.8**
Commercial or Industrial:			
Small Light and Power	5,460,171	5,270,676	+ 3.6
Large Light and Power	235,580	231,950	+ 1.6
Other Customers	154,313	146,121	+ 5.6
Total Ultimate Customers	**44,497,408**	**42,342,680**	**+ 5.1**
KILOWATTHOUR SALES—During Month of September			
Residential or Domestic	5,255,608,000	4,619,254,000	+13.8
Rural (Distinct Rural Rates)	835,557,000	808,957,000	+ 3.3
Commercial or Industrial:			
Small Light and Power	4,434,078,000	4,044,360,000	+ 9.6
Large Light and Power	12,300,774,000	10,142,301,000	+21.3
Street and Highway Lighting	249,073,000	224,308,000	+11.0
Other Public Authorities	593,203,000	540,575,000	+ 9.7
Railways and Railroads:			
Street and Interurban Railways	259,880,000	273,568,000	− 5.0
Electrified Steam Railroads	186,988,000	178,790,000	+ 4.6
Interdepartmental	41,523,000	45,751,000	− 9.2
Total to Ultimate Customers	**24,156,684,000**	**20,877,864,000**	**+15.7**
Revenue from Ultimate Customers	**$430,679,900**	**$387,522,000**	**+11.1**

RESIDENTIAL OR DOMESTIC SERVICE

AVERAGE CUSTOMER DATA—For 12 months ended September 30th			
Kilowatthours per Customer	1,789	1,655	+ 8.1
Average Annual Bill	$51.88	$49.15	+ 5.6
Revenue per Kilowatthour	2.90¢	2.97¢	− 2.4

* By Courtesy of the Federal Power Commission.
** Negative Percentage due to Reclassification.

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EDISON ELECTRIC INSTITUTE BULLETIN

Volume 19 JANUARY, 1951 No. 1

The Proper Approach to Flood Control

By Louis V. Sutton

President, Edison Electric Institute and Carolina Power & Light Company

An address before a meeting of the South Carolina Association of Soil Conservation District Supervisors, Columbia, S. C., January 16, 1951

IT might seem somewhat strange to you that power company people should be directly interested in the work of your organization, but we have and always have had, both a direct and an indirect concern in soil conservation.

The company which I represent serves one of the great agricultural regions of the South—the mid-Carolinas. One hundred and three thousand of our customers, or 40 per cent of the total served, are farm or rural customers; and the well-being and prosperity of this large group of people is of vital concern to our company. It is of vital concern to all industry, but I doubt that any other business in this area has 103,000 farm and rural customers.

Farm Use of Electric Service

A poor land manager usually is an improvident farmer, and an improvident farmer is a poor customer for an electric utility, and, by the same token he is a poor customer for any other commodity or service. I am happy to say that the farmers of the area we serve not only are learning the lessons you are teaching, but that they have improved their economic position by reason of such newly acquired knowledge.

The average farm and rural customer on our lines last year used about 158 kilowatthours of electricity per month. This was an increase of 53 kilowatthours per month over the consumption of power by the same group in 1944. When I tell you that this means an increase in gross revenue of $1.43 per month per customer, I need not tell you more about our direct economic stake in intelligent and profitable agricultural methods.

Our concern, however, goes beyond the natural interest we have in increasing the use of electricity by farm customers. We have no large cities in our territory — Raleigh and Asheville are the largest—but we have a host of rural small towns and rural communities. While it is true that the whole nation has a stake in the farmer's welfare, we happen to be in a position where the economic status of the farmer has a major influence upon the general economy of the area we serve.

Reforestation

As a matter of fact, our company is also directly participating in your program and grateful for its aid. We hold some 12,000 acres of land not at present being utilized for power generating. Most of it is in forest land, and we are following a policy of approved timber cutting and reforestation. This week, we are setting out over 200,000 pine seedings on one of our tracts. Twenty-five to thirty years from now we hope to be cutting our own poles from our own land. Some of this land is rented to farmers, and we encourage them to manage the land well to prevent erosion and to increase its fertility.

Electric Companies Rooted to Their Areas

Ours is a peculiar business. Unlike some industries, we can not move, but are rooted to the area we serve. Our investments are made in rural lines, plants, substations and other equipment for permanent use, and without a sound agricultural economy, the value of our property will decline instead of increase.

Your work involves both soil and water—and our industry is vitally interested in the latter. We operate nine hydroelectric generating plants, and without a dependable supply of water, they can not produce power. We do not use water as most industries do, in the sense that we do not take it from a stream or lake and use it in processing a manufactured product. In the case of hydroelectric generation, only the energy of the falling water is used, and the water is then allowed to go on down stream for re-use—unpolluted and exactly as it was before it went through our turbines.

Steam Generation

In addition to our nine hydroelectric stations, we operate three steam electric generating plants, and, of course, they are dependent also upon a dependable water supply. While the water in our boilers is used over and over again, in the process of converting it to steam, an enormous amount of water is necessary for condensing it back to water. For cooling our steam pipes at Lumberton, for instance, we take water from the Lumber River at the rate of 125,000,000 gallons per day. Should this supply fail us, we would have to shut down our plant. All of this condensing water is returned to the stream, unpolluted for further use by the industries and municipalities below us.

Speaking of industries, power companies share your preoccupation with water for such development. You and

I want our area to grow industrially, so as to provide more employment and general prosperity to our communities. But many industries, especially those which find the Carolinas congenial to them, need a lot of water—dependable and of acceptable purity. Industry is not going where water is given to them via floods when they don't want it, and withheld from them, because of an erratic supply, when they do want it.

Soil Deposit Behind Dams

We also have a special interest in soil, a concern shared by all users of water, namely the silt which floods into streams and which settles to the bottom of dams, reducing their storage capacity. This silt also fills in municipal water supply basins, and the lakes of industrial users. The soil which is deposited behind our dams is the rich, productive topsoil which you are interested in keeping upon the crop lands of watersheds.

All of these direct connections between soil conservation and the power industry are mentioned just to remind you that we are genuinely and everlastingly behind you in your efforts to save the soil of our land, conserve the water supply and prevent floods.

There is no need for me to tell you how destructive floods can be, nor need I remind you of the deep interest the people in our basins have in their prevention. But I am convinced that people generally have, in many instances, overlooked the importance of soil conservation to flood prevention. Almost every authority today believes that the cure lies in the hundreds of thousands of little dams — the terraces — which farmers can use in their plantings, and in reforestation, strip farming, cover crops, head-water dams, dry dams, and similar erosion-preventing devices.

Unfortunately, to the laymen, a terraced acre is an unspectacular thing, while a $30,000,000 dam is a dramatic —if ineffectual—barrier against floods.

Big Dams Ineffectual Against Floods

All the evidence is against the big dam. Yet, while the hydroelectric, or so-called multiple-purpose, dams continue to be agitated for, and while misguided citizens, anxious for protection, clamor for them, and while hundreds of millions of dollars are being wasted on them, vast areas of our land each year are stripped of their fertility, the floods continue as before, and the problem remains unsolved.

The denuding of our crop lands of topsoil is tragic in more ways than one. Everyone knows that the level of our ground water is dropping. Everyone remembers the stern measures which the city of New York was forced to take recently to conserve its water supply. The failing of a water supply because of the rapid runoff of water is not as uncommon as the public believes. Expensive projects are being undertaken to pipe surface water to growing communities, and there is no guarantee that even these supplies, which seem adequate now, will continue to meet the expanding demand.

It is tragic because we not only are wasting our resources and money, but we are wasting time, which might prove to be even more expensive. Worst of all, the support of the people which should be directed to a realistic remedy, is being diverted to methods which are frivolous and ineffective.

Weakness of Downstream Flood Control Dams

How much the so-called multiple-purpose dams have cost this country can never be accurately computed. Although the expenditure must be reckoned in billions, the cost of their construction and operation is negligible when compared with what it has cost through delay in the adequate operation of a real flood control program, with consequent annual loss of soil and ravages of flood damage.

The weakness of the downstream flood control dam is now known to those who have given serious study to it. A recent analysis, reported by the Wildlife Management Institute, and based upon official Department of Agricultural surveys, states that 15 per cent of flood damage occurs in downstream urban areas; 6 per cent occurs as agricultural damage along the main stream; 4 per cent is agricultural damage along principal tributaries and—you probably know this—*75 per cent of the damage is agricultural damage in the headwater areas.* In a survey of one stream, it was found that nearly 80 per cent of all the damage was UPSTREAM from a so-called flood control dam.

While figures vary according to the type of river and location of dams, it seems that multiple-purpose dams can prevent only from 21 to 50 per cent of flood damages on those rivers. It is a costly thing to approach a situation with a solution which can solve only from one-fifth to one-half of a serious and urgent problem.

There is, of course, no rigid plan which will apply with equal effectiveness in all cases. But I believe you will agree that your objectives may be accomplished by such methods as:

Flood Control Methods

1. Using or conserving water where it falls;
2. Improving of river channels and removal of "bottle necks";
3. The construction of levees;
4. The construction of retarding basins at suitable sites to hold back excess water temporarily until the improved river channels can handle it without overflow. Except during the few days when water is backed up behind the dams, the single-purpose flood control retarding basin is dry.

Over and over again, conservationists tell us that dams built for both power generation and flood control are at cross purposes. We can not arrest floods unless we provide storage space for the flood waters, and we can not generate power unless we have water in our ponds. Experiments with this type of dam have proved unsuccessful, no matter what their proponents say, because when an attempt at compromise is made, we have both an inadequate flood control system and an economically unfeasible source of hydroelectric power.

Aside from the fact that the dams give absolutely no protection to the most vulnerable land—the upstream land—they give little or no protection even to the downstream area. I recently read an article in the *Saturday Evening Post* describing the utter failure of the $25,000,000 Pensacola Dam on the Lower Grand River in Oklahoma to prevent the worst flood in the history of that region. I quote the author, Mr. Elmer T. Peterson, in this instance, "Newspapers throughout the region were sizzling with editorial comment on the failure of that expensive dam to do what it was supposed to do."

Effectiveness of Soil Conservation

This is not an isolated example of the futility of the multiple-purpose dam. If that $25,000,000 had been spent on a soil conservation program on the headwaters of that stream, there is no doubt in my mind that it would have arrested the waters more effectively—and would have saved the soil to boot.

The proper and effective use of dams for the purpose of flood control is epitomized in one of the most dramatic stories in the history of conservation in this country. In March, 1913, a disastrous flood swept down the Miami Valley in Ohio. It took 361 lives and caused property damage amounting to $66,000,000. In comparison with it, the flood menaces for which the multipurpose dams are proposed are mere gulley washers.

Dry Basins Constructed

Citizens of that area waded in their boots to a meeting and organized the Miami Conservancy District. Two milliion dollars was raised to prevent, for all time, a recurrence of floods in the area. The best hydraulic engineers in the country were imported. Specialists were even sent abroad to study the flood records of the Tiber and other great rivers.

I want to emphasize the point that the people of the Miami Valley in Ohio were determined to do the job thoroughly. Colonel E. A. Deeds, Chairman of the Conservancy Board, in 1945 recalled that "if inadequate works were constructed, coming generations in the Valley would rely upon a false security . . . it was apparent that anything short of full security would be intolerable."

The engineers finally decided upon the construction of a series of dry basins with flumes at the bases of the dams. Such dams are entirely automatic and require no gates. Water is collected in the storage basin, slowed down and released to basins downstream.

Land Flooded by Reservoirs Wasted

At each of the dams in the district, the following words are engraved in granite:

> *"The Dams of the Miami Conservancy District are for flood prevention purposes. Their use for power development or for storage would be a menace to the cities below."*

The Miami Valley plan has worked; there has never been another destructive flood in the area. The purpose of the program was stated in plain and sincere words—to prevent floods. This is the voice of experience, but it is unheeded in many places today, when flood control is proposed.

What many people do not stop to realize is that, from a national or regional point of view, land which is permanently flooded by reservoirs is as much lost as that by flood water erosion. Which is better: to lose valuable bottom land for a few days once in five or ten years, or to lose it from our productive capacity forever? Especially when the sacrifice produces little toward the solution of our soil and flood problems? Such losses involve not only the soil itself, but often farm buildings and even whole communities.

The largest flood ever to visit the Tennessee Valley area covered temporarily slightly less than 500,000 acres of land. On a basis of the progressive increase in the size of floods of record, the Army Engineers estimated that the largest flood which might be expected in the Tennessee Valley within the next 500 years would cover something over 600,000 acres of land temporarily. To prevent a flood of such proportion at some time during the next 15 generations, multiple-purpose dams have been built in the Tennessee Valley which flood *permanently* more than 700,000 acres of land.

According to a Tennessee Farm Bureau report in 1942, the crop loss to the state of Tennessee, due to permanent flooding of bottom land, is estimated at $13,000,000 annually. Additional flooding since 1942, plus enhancement in crop value, brings the estimate today closer to $20,000,000 per year. Flood prevention attributable to TVA's system of multiple-purpose dams has not approached that figure in any single year.

It is obvious that we must continue to have dams for reclamation, irrigation, power production, even for flash flood control. But the long-range solution, in my opinion, is in the work you specialists are doing — conserving the water where it falls. When the public understands how fundamental this is, and when it gives you the support for your program of crop rotations, plowing under green manure, grassland agriculture, strip cropping, terracing and reforestation, as it has given support to the more spectacular and awe-inspiring multiple-purpose dams, then I think we will be on the road toward the solution of one of America's greatest problems.

C.I.G.R.E. 1950 Proceedings Published

PARIS Headquarters of C.I.G.R.E. (International Conference on Large Electric High-Tension Systems) announces that the printed Proceedings of the 13th Biennial Session of C.I.G.R.E., which was held in Paris, June 29 to July 8, 1950, and was attended by 1577 Delegates from 42 different countries, are now ready for distribution.

The Proceedings, consisting of three cloth-bound volumes totaling 3248 pages, are available in either English or French and contain all of the 126 technical papers presented at the 1950 Session, revealing the latest developments in electrical equipment and apparatus and in operating practices on high-tension electrical systems in 20 different countries. It also includes the full discussions of these papers by delegates from all countries and all of the International Study Committees' reports as well as other special technical reports, summarizing the work of the various sections into which C.I.G.R.E. activities are divided.

C.I.G.R.E. activities embrace all problems relating to the production, transmission and distribution of electrical energy and to the design and operation of associated electrical equipment and apparatus. Consequently, these Proceedings provide a valuable source of reference to all operating and manufacturing engineers and executives in the Electrical Power Industry and to all Technical Schools, Libraries and Associations.

The delivered price of the three volume set of the 1950 C.I.G.R.E. Proceedings is 9000 Francs ($25.71) to non-members of C.I.G.R.E. and 7500 Francs ($21.43) to C.I.G.R.E. members. Subscriptions may be mailed with remittances in either French or U. S. currency to C.I.G.R.E., 112 Boulevard Haussmann, Paris, France.

Further information relating to C.I.G.R.E. activities or the 1950 Proceedings may be obtained from Frederic Attwood, Chairman, U. S. National Committee of C.I.G.R.E., Room 1781, 50 Church Street, New York 7, N. Y.

Credo for Americans

By Robert Montgomery

Mr. Montgomery is a well-known motion picture and radio actor and director, who has set forth succinctly, in the following inspiring creed, his beliefs in a Free America.

WHEN in the course of human events inhuman forces arise to threaten freedom, we who still are free arise to defend it.

We have met the challenge before and beaten it down. We have learned the need for unending vigilance. We are vigilant now. We are united, determined and strong.

This is not alone because of our material strength. Our real power flows from our moral and spiritual resources. We are strong because we are free, and we have been bred to value freedom far above our lives.

We pride ourselves on certain traditions, certain values. As free men we believe in the tradition of individualism . . . in the integrity of the individual, his personal worth, his independence, his dignity.

We believe in the widest personal opportunity, narrowed down as little as possible by public interference.

We believe in the competitive spirit . . . in competition among ourselves, but not between the governed and those who govern.

We believe in free private enterprise . . . in what a man can achieve by his own hands and brain, by his energy, industry and inspiration; by his determination and self-reliance.

As free men we believe in the other fellow's freedom—in his merit, his integrity and his independence. We believe in the tradition of mutual self-help. And we endorse the practice—as well as the theory—of the Golden Rule.

We believe in the tradition of decentralized power—politically and economically. As free men we believe in a rule of law—and in a government of laws rather than of men. That is because where laws rule, impartial justice is probable; where men rule, partial justice is possible.

As free men we believe in the right of democratic criticism of authority. We reject thought control as well as speech control. We seek the truth, but reserve the right to be honestly mistaken.

These traditions, these values, these freedoms form the great and unshakable foundation of our system.

We have learned to recognize the enemy within or without. We can peer through his smokescreen. We know all his tricks of camouflage.

He may appear in a different uniform. He may run up different colors. He may sound a new battle cry of hate. But he can never change his true identity.

This enemy is always tyranny—whether imperialism in 1914, Nazism in 1940, Communism in 1950.

In earlier trials the cause of freedom emerged triumphant over the soul-destroying forces that blocked the human path. We who were rescued from tyranny then do not forget the rescuers who fought and those who died.

We who still are free will conquer again . . . in their name, and in the name of freedom.

John Ronayne Appointed Manager of Better Light Better Sight Bureau

JOHN H. RONAYNE of the Edison Electric Institute has been appointed Manager of the Better Light Better Sight Bureau. The announcement was made by Ralph P. Wagner, Chairman of the Bureau.

Mr. Ronayne joined the editorial staff of the EEI in 1940 after several years' experience in the public utilities advertising field. He served as an Infantry Officer in World War II, returning to EEI in 1945. Born in New York City, Mr. Ronayne is a graduate of Fordham University.

Mr. Ronayne, who has served as Acting Manager of the Better Light Better Sight Bureau for the past year, succeeds Glen R. Trumbull, who was Manager of the Bureau from its beginning, 1934, until his retirement in the latter part of 1948.

Last Call!

FEBRUARY 15, 1951

IS THE DEADLINE for ENTRIES in the

THOMAS W. MARTIN RURAL ELECTRIFICATION AWARD
PLANNED LIGHTING AWARDS
FRANK E. WATTS AWARDS

This is a last-minute reminder that the entries for the Frank E. Watts, Thomas W. Martin and Planned Lighting Awards must be received by the Edison Electric Institute not later than February 15, 1951.

Don't pass up this opportunity to gain well-deserved recognition for your Company and any individuals concerned who have made outstanding accomplishments in the fields covered by the above awards.

Send your entry to:

EDISON ELECTRIC INSTITUTE
420 LEXINGTON AVENUE NEW YORK 17, N. Y.

American Business Strategy for the Long War

By Gwilym A. Price
President, Westinghouse Electric Corporation

From a speech before the Detroit Economic Club, Detroit, Mich., November 13, 1950

SOME OF US can recall a time when the businessman's chief problem was simply to give a good economic performance—to keep his plant modern, to produce more of a better product at a competitive price, to pay good wages, to reward the stockholders for the use of their money, and to have a little fun while doing all this. I don't need to tell you that those days are as completely gone as the chain drive or the rumble seat.

Today the businessman's problems are far more difficult. A world civil war is being waged, and that war imposes on American business a set of responsibilities breathtaking in size and world-wide in scope. Two major problems dominate American industry, our people, and the rest of the world. The first can be described quite simply. Russia has been carrying out a program of aggression designed to draw all Asia and Europe within its empire. The United States, for compelling reasons, has set out to check this expansion. And so we must re-arm ourselves, re-arm our friends, and make Mr. Stalin stop grabbing real estate.

"The Truth Is Much Worse"

It is too easy to dwell on the appalling blunders that have brought us into this situation. We can say of our handling of foreign affairs what was once said of Irish history: "The lies are bad, and the truth is much worse." But our time for post-mortems is limited. Our country desperately needs what only American industry can give it—quick and decisive superiority in quantity and quality of everything that is required to fight and win a war. American industry will not only give it that superiority, but will give it with a good and positive will, with all possible ingenuity, energy and determination.

The years ahead threaten some bad times for everyone—including, of course, businessmen. But when this particular businessman begins to feel sorry for himself, he remembers what a sergeant said the other day to some veterans who were expressing an understandable lack of enthusiasm at finding themselves on the way to war again. "What you guys gripin' about?" the sergeant asked. "You just had a five-year furlough, didn't you?"

Fortunately, some aspects of the present situation are in our favor. Most significant and most encouraging is the condition of our industrial economy. We have a potential war production greater than all the rest of the world, vastly greater even than our own volume at the peak of the last war. American productive capacity is the most powerful political and military force in the world today.

Stalin's Resources

Other dictators have misjudged that industrial power to their sorrow. Stalin, if he does the same thing, will make a most costly blunder. The vast preponderance of the world's industrial strength is arrayed against him. His European allies are backward and unstable; of some of them it might be said that they have never yet ended a war on the same side they started out on —unless they changed sides twice. His resources are underdeveloped and unbalanced; much of his country is still in ruins. Detroit and Pittsburgh — two cities every European knows by name— are on the opposite side. If I were Ivan Ivanovitch, I think I might be asking myself right now, "Is all this *good?*"

Well, how does it happen that our country's industrial strength is so great? Mr. Truman and Mr. Keyserling agree that it happened because of policies pursued and help rendered by Washington. Did it?

Postwar Industrial Expansion

I think not. American industry is strong today because, the moment the last shot was fired in 1945, its managers and owners began an enormous program of expansion. Though the end results were more employment, greater production and sound national progress, they expanded in order to keep up with competition and to make profits. Government planners, who scorn such low and unworthy motives, were at that time busily designing controls to take care of the mass unemployment and depression they expected would follow the war.

American industry is strong today because in five years it poured some 115 billion dollars into new and improved plant. By 1949 its flood of goods had caught up with demand and reversed the government's inflationary policies. By that time, government planners had changed their minds about post-war depression. Now they were almost ready with a program for restraining runaway inflation.

American industry is strong today because the railroads of America spent five billions on new plant, motive power and rolling stock; because the oil industry reinvested more than eight billions and increased its domestic producing and refining capacity by some 25 per cent; because the automobile industry—America's favorite—spent billions on new buildings and machinery. It is strong because most of America's four million business enterprises did the same sort of thing, each in its own way and according to its own judgment.

Source of American Industrial Strength

American industry, finally, is strong today because it is big, in sum total as well as in some of its individual units; because it is an effective pattern of many integrated businesses, some large, more medium, most small; and each of them essential to the welfare and continuing growth of the others.

Spokesmen of one segment of government have concentrated on the destruction of this integration through attacks on big business because it is big. Many Americans take comfort from the fact that, even if we don't have all the steel we want, we still have more than all the rest of the world. Yet, on the day war began in Korea, the federal government was engaged in a spirited cam-

paign to nag the American steel industry into a state of nervous collapse and then cut it into little bits and pieces. Many of us take comfort from the thought that if anyone builds an H-bomb, it probably will be this nation. Yet the government was seeking in the courts to whittle down the du Pont company at the same time that it asked that firm—presumably because it is big and strong as well as smart—to go find a 200,000-acre site and build and run a plant for producing the hydrogen bomb.

Industry—Monster or Necessity?

Almost any sizable company you can name has been haled into court to spend time, money and talent disproving government charges that it has strangled competition (though competition has been flourishing as never before) and proving that it does not hold monopoly control over its industry (though in almost every case it has a smaller percentage of its industry's total sales than it had ten, twenty or thirty years ago). In the eyes of government, these firms are a type of criminal to be punished and restrained. And yet the same government entrusts these same companies with the development and production of armor plate, explosives, radar equipment, jet propulsion, atomic energy, and the other advanced armament of war. The criminals, in other words, are entrusted with the lives of our youngest and best. The very survival of the Republic depends on the skill and speed—yes, and integrity—with which these alleged monsters do their work.

"Inspired Idiocy"

Such inconsistency may look like inspired idiocy, but the causes are less simple. Inconsistency is a built-in part of any strong, centralized government. It is easy for us to fall into the common error of thinking of such government as a unit, as one man, one mind and one plan. On the contrary, it is an aggregation of many units staffed by many men. These men have many minds and many plans, and the chief aim of nearly all of them is to push themselves and their plans ahead of their competitors in government.

When we realize this, the government's whole pattern of action becomes clearer. Then we understand how the same government can pass laws to keep prices down, yet spend billions to keep prices up. We see how this government can expect industry to act like a giant but not to be one. We understand how it can attack the steel industry in 1939 for being "over-expanded"; in 1942 for not being big enough; in 1949 for being too big; and again in 1950 for being too small. No wonder Mr. Fairless speaks of the need for an accordion-pleated steel plant that will contract conveniently under the glowering eyes of the Department of Justice, and then expand obligingly in response to the urgings of the Department of Defense.

When we realize the real reasons for such inconsistency, we are not astonished when one section of government forbids the automobile industry to set retail prices on its cars, and another part attacks it for not establishing and enforcing retail prices. Nor do we bat an eyelash when the government—with butter, eggs and cheese stashed away in caves and coolers all over the country—blames high food prices on hoarders. We see, in short, the grand fallacy and foolishness of a centrally planned economy.

What Capitalist Democracy Can Do

Well, even though we got there in spite of government, the fact remains that our industrial position today is superb. The record of American industry in the five-year furlough between the wars has been, by any standards, phenomenal. From now on our economists and historians, instead of describing the traditional accomplishments of our economic system, might better cite the statistics of the half-decade just past as a proud example of what this capitalist democracy can do.

In those five years you in Detroit built us nearly 20 million motor cars and trucks. We put up four million new homes and increased by nearly 50 per cent generating capacity of our private electric light and power industry. We doubled the number of our college students, and put more than eight million television sets in American living rooms. Our railroads converted to diesel power, and our cities cleaned up some of their slums and traffic congestion. We spent 15½ billions to build and rebuild highways and used them in a great mass migration into suburban living. Our farms became more prosperous, more productive, and better equipped than ever before. Our scientists prolonged life, while the average work week was reduced and paid vacations and the five-day week became almost universal. Our people supplied, at the same time, the dollars and goods by which much of the free world began to rebuild itself.

This phenomenal performance of American industry seems to me to demonstrate two points. As to the first, may I say this:

Industrial Economic Planning

We are too prone to consider "economic planning" as something carried on by the state monopoly known as socialism, or under the despotism known as communism. We even accept the left-winger's definition of capitalism as an unplanned economy. But where else will one find planning equal to that carried on in American industry since 1945?

Here is planning at its best. It is planning worked out by the operations of the free market, not by a few individuals who try—and, regardless of their merits, inevitably fail—to master the complicated economic processes of our society. It arises from the rich experience of a million owners, managers, technicians, foremen and others. It comes out of the heads of men who risk everything on the soundness of their judgment—who, if they guess wrong and fail, do not expect to be transferred to another agency to carry on further planning.

"Works Best When It Is Freest"

The second demonstrated point is simply the solid fact that our system works best when it is freest. Ours is the only country where the people took economic controls away from their government at the end of the war and restored the capitalist system. Our economy has flourished. Other governments retained their controls, and those countries have improved their production only moderately over their pre-war figures. If we had retained controls here, our own economy would have stagnated. If that had happened, imagine our position today!

What we learned about such controls should help us to work out a course of action. First, any and all present emergency controls must be held strictly as measures for a special and temporary period. In September, the Congress gave the President extraordinary powers to requisition, allocate, set priorities, control prices, stabilize wages,

make wage adjustments, punish hoarders and QUOTE "expand the economy"—all this liberally sprinkled with "at his discretion" and "as he may deem necessary." Some day we will want those economic freedoms back again. Some day, God willing, two or ten or twenty years from now, we will take up life again in a post-war era. As a people, we must remember then what we have learned about controls. We must keep in mind the convincing demonstration that our system works best when it is freest.

Recognize Controls For What They Are

We must recognize controls for what they are, not for what we think they *should* be—for what they actually do, not for what we want them to do or hope they will do. Between wars, we tend to forget certain basic principles about direct economic controls. For instance, the classic remedy for a control that doesn't work is to scold the public and impose two more controls that don't work either. Once imposed, controls hang around long after the emergency that gave them birth has ended. When you start out with the intention of controlling one small part of the economy, you are irresistibly driven to control all the rest of the economy. So you end with complete domination of citizens by agents of the state.

Most vital of all, we must understand the relationship of direct controls to a very special problem of our time. I began this talk by citing Russian imperialism as one of the two major problems dominating American industry and American life. The other is that scourge and curse of our generation—inflation.

What Is Inflation?

It is no secret that communists everywhere are counting on us to ruin ourselves by bankruptcy. Faced with the possibility of a decade or a generation of Russian hostility, we must protect ourselves against inflation with the same sense of resolution and emergency as we protect ourselves against physical attack. And we must begin with a sound understanding of what inflation is, what causes it, what cures it, what controls can and cannot do to curb it.

That is a big and complicated subject — a subject for another speaker. There is, however, one basic economic truth we can surely agree upon. Direct controls can hide and retard some of the effects of inflation for a time; but they cannot stop it or cure it, and in the long run they aggravate it by restricting and disorganizing production.

Part of the prescription for checking inflation is greater production of useful goods. We will produce those goods if the economy is not handcuffed by controls. The other ingredient is government policies that are non-inflationary —that fight inflation instead of feed it. One of our primary jobs today is to persuade the government to adopt such policies.

The government will tend to fight inflation by direct controls on prices, wages and distribution, thus achieving nothing but concealment of inflation's effects and a freezing of the economy into near-paralysis. It must be led to fight the source and cause of inflation, not its symptoms. It must adopt money and credit policies and undertake debt management that will attack this evil at its roots.

Steps to Prevent Inflation

As the Committee for Economic Development has indicated, no program can prevent all price increases in wartime and still call forth maximum flows of goods and services. There are, however, a number of effective steps the government can take to prevent a general rise in prices and still leave the economy as free as it can be to operate efficiently and to grow throughout a prolonged emergency. It can raise taxes. It can restrict credit. It can reduce the buying of consumer goods by intensive selling of bonds to the American people. It can reduce the supply of money by selling more bonds outside the banking system. It can work out maximum coordination and economy in military expenditures. It can curtail government expenditures that are non-military.

You know which one of these we are getting the least of. This administration has curbed credit, raised taxes, and made a start on coordination of the military establishment. Yes, and it has called for sacrifice, saving and austerity from the people; but it has said scarcely a word about sacrifice, saving and austerity in Washington. The Congress has wisely refused to adopt new social welfare programs, and it has forced on the President a half-billion dollar cut in appropriations, mostly for programs approved but not yet started. But neither Congress nor President has reduced or eliminated a whole series of programs and projects already under way.

Five months after the outbreak of war in Korea, we are still running the same grab-bag, pork-barrel show we ran in the years between wars. We are still buying the nation's entire silver output at a price 20 per cent above the market. The Treasury Department is still fanning the fires of inflation by financing its deficit at record low rates of interest and through expansion of central bank credit. The government has been spending almost a billion dollars a year buying mortgages. It has appropriated more than two billion dollars for 1951 for public roads, rivers and harbors, subsidies to farmers and reclamation projects. It is still pouring out billions to fill a dollar trade gap that no longer exists.

Government As Usual

We cannot afford to continue that kind of government-as-usual when we have had to jump our military appropriations from 15 to 35 billions—or whatever today's latest figure is. Many of these non-defense projects can wait, some can be discontinued, and all can be reduced.

For years, businessmen have been asking for elimination of waste in government, for curtailment of government intervention into private business, and for sound financial policies. We have been asking so long and so often—and with so little results—that we have become tired of hearing ourselves talk. Now the situation has changed. The Republic is fighting for survival. It faces a rearmament program so costly that the figures begin to have no meaning. We *must* have those economies. We have both the right and the obligation to demand an end to government policies that will rot the currency, weaken our economic stability, and breach our defenses against a merciless enemy.

Sound Currency, Prudent Budgeting

In their drive against the inflationary menace, businessmen should join forces with those huge and still multiplying groups whose interests in this subject are mutual and are identical with ours, but whose political potency has not been utilized to any appreciable extent. Vast armies of security owners, of insurance policyholders, of present and future pensioners—indeed, of all those people who

have a vital stake in the stability of the dollar — should be marshalled on the side of sound currency and prudent budgeting.

Damage to the American Pocketbook

It is not the well-to-do, of course, but the great masses of people who suffer most painfully from inflation. Between June 15 and October 15 of this year, the consumers' price index of the Bureau of Labor Statistics rose by 2.2 per cent and the wholesale price index rose by 7.2 per cent. Even if we apply the smaller of these two figures to the nation's fluid assets, we see that the general public, in three months, had an apparent loss in purchasing power of about 5½ billion dollars. Although it is likely that economists can point out flaws in this reasoning, and particularly that price rises are necessary in some situations to encourage marginal producers, it is still obvious that the American pocketbook has just sustained very real and grievous damage.

Virtually every economist and organization advising the government agrees that the Treasury Department must fight inflation by persuading the public to invest heavily in small unit bonds. I, for one, am deeply concerned about the Treasury's ability to carry out such a program. John Public does not require much mathematical genius to see that the E bond he bought for $75 in 1940 is — because of inflation — worth about $60 today instead of the promised $100. He must be asking himself now what today's bond will be worth in 1960.

A Program of Genuine Economy

If John Public buys corporate securities, he is confident that the management will do its utmost to cut expenses, will operate according to sensible financial rules, and will not dilute the value of his holdings without his consent. The U. S. Government is the one exception where these basic laws of sound management do not hold. John Public certainly should buy government bonds as a citizen—but will he do it as an investor? If he refuses, is the remedy to be sought in ruinously high interest rates or in forced savings that are only a disguised form of taxation? Certainly there will be no need to discuss such expedients, let alone adopt them, if government will practice the virtues it recommends so highly to its citizens. A program of genuine economy will do more to maintain bond prices and sales than will any amount of market manipulation.

To sum up, then, the larger present-day problems of American industry are three-fold. It must continue to give its good economic performance. It must help to re-arm the United States and its allies—and speedily. And it must use all its strength and influence to see that that rearmament is carried out without collapse brought on by inflation or frostbite produced by controls.

In addition to these we must, both as businessmen and as citizens, help the government to create and carry out such sustained, long-range policy and strategy as we are discussing here. The next Russian assault may come almost anywhere. It may come tomorrow as a sudden all-out invasion by Soviet forces, or it can continue for years as a series of engagements fought by Russian satellites all over the world. Perhaps we face years of stalemate, with victory falling to the power best able to survive. We Americans are burdened with the outlandish problem of preparing ourselves physically and spiritually to wage a political, economic and military war against Russia when and where she wills it. That is no easy task; but if we value our freedom, we can follow no other course.

H. B. Hardwick

HIRAM BURRELL HARDWICK, comptroller and director of Consumers Power Co., died of a heart attack at his home in Jackson, Mich., Dec. 28, 1950. He had served in various capacities on committees of the EEI Accounting Division since 1938 and was chairman of the division in 1947-48.

MR. HARDWICK

Mr. Hardwick has been a leader in public utility affairs in New York City, Birmingham, Ala., and in Michigan. His utility career began in 1918 with Alabama Power Co., and in 1925 he went to New York with Southeastern Power & Light Co., one of the predecessor companies forming The Commonwealth & Southern Corp., of which he was assistant comptroller from 1930 until 1947. He was elected comptroller of Consumers Power Co. in July, 1947, and elected to the Board of Directors in September, 1949.

Mr. Hardwick was a committee member and officer on Accounting Division committees without interruption from 1938 until his death. For seven years he served on the Division's Plant Accounting Committee, acting as chairman of that committee from 1940-42. After 1945 he was at various times a member of the Division's Advisory, Executive and General Accounting Committees; most recently serving as chairman of the Special Committee on Revision of the Uniform System of Accounts.

He was a member of the Controllers Institute of America and of the New York Society of Security Analysts and was also active in the affairs of the American Gas Association.

Mr. Hardwick was born in Easonville, Ala., August 26, 1898, and attended Alabama Polytechnic Institute.

Utilities' "Uniform System of Accounts" Draft Available

A TENTATIVE draft of the "Uniform System of Accounts for Electric Utilities," prepared by the Committee on Accounts and Statistics of the National Association of Railroad and Utilities Commissioners, has been made available by the Committee for the purpose of obtaining suggestions from interested parties. Copies of the draft have already been sent to EEI member companies for their comment.

Additional copies of the tentative draft, comprising 152 pages, 8½ by 11 inches in size, may be obtained by writing to the EEI, 420 Lexington Ave., New York 17, N. Y., at a price of $3.00 per copy to member companies and $5.00 to non-members.

Industry in the Smaller Towns—Its Wherefore for Us

By G. V. Rork

President, Northern States Power Company (Wisconsin)

An address before the North Central Conference (Ill., Iowa, Minn., N. and S. Dak., and Wis.) of the Rural and Urban Development Committee, EEI, Minneapolis, Minn., October 30-31, 1950

TO many of us, the small town and its industry are everything—because most of the communities served in this midwest area are small towns. While the great industrial centers are, of course, in the large cities, nevertheless, when printed in a newspaper, the name of the village of Stetsonville is longer than the name Minneapolis—and to a mill operator or a dairy plant manager, the village in itself is far more important.

As an industry, we have been justly proud of a job well done, but we have, I fear, let ourselves be talked about, written about, and finally unfavorably legislated against, because phrases like "power trust" and "special privilege" are too readily believed by people in small towns, who are as accustomed as anyone else to adjectives like "stupendous," "huge," "gigantic," and "breathtaking," used so often by movie publicity writers, radio and TV announcers in describing almost anything.

Small Towns and the Electric Company

This situation, I believe, has made it necessary that we take a look into our small-town activities in the light of our true relation to the small town. Under regulation and franchise, the electric company does operate a regulated monopoly, and the acceptance of the franchise or permit to operate carries with it a complete and always definite responsibility.

First of all, the electric industry did everything it could to get the small town on the power lines. We bought the old, small system and held before the voters the superiority of central station service. Those of you who work in large systems remember the rate-making policies that made service from the "High Line" less expensive for the user. Some will remember that it was said that High Line service was flexible and always gave the city or village a chance to grow, that it could be arranged to serve any industry that could be attracted, that if Henry Ford or General Motors wanted to put a plant there electricity for it was at once—or soon—available from the line. You told them all that if General Motors wanted to make a car called "Stetson," it could just as well be made at Stetsonville as anywhere else, from a power viewpoint.

Causes of Misunderstanding

We thought we were pretty safe back in the days of pre-World War I. And so we earned the franchise or the permit. And then the birds came home to roost! Many towns, villages and cities had been connected to the same system. Rates were uniform, as were the standards of service. To me it was not strange that these small cities and towns were easy prey for internal combustion plants to serve certain loads or certain types of communities. No favoritism could be given to one area against another.

Among other factors, it became clear that in the small village we were looked upon and called "Big Business"—and epithets flew about. Glib salesmen pointed out that the electric company was spending millions which were going into the general rate base and that the small community under regulation must pay its share of the costs, while the tax benefits went to the area adjacent to the big plants. These, and the related problems, soon made the electric company, even though wrongfully, the foreground of the community, or the district, or the state.

Not Big Business

The real fact is that an electric company's relation to a small city or village is "Not Big Business." We actually are small business. There will be many industries in almost any community who *gross* far more than the electric company *grosses*. There are many who turn their operating capital five to seven times *per year*, whereas the electric company will do very well if it turns its capital any more than once in four or five *years*. Usually, the leading banker knows this, and often properly tells you that the sand and gravel company does about so much, or the feed mill does more business than does the electric company, or that the food processor distributes such an amount back in payments for crops, seed, or labor. Or, that a certain local dairy company pays farmers so much, thus adding strength to the economic position of the small city or town.

These facts are known, so that it is easy to raise the bugaboo about money leaving the town, with the customer having only a paid bill for electric service. All of this springs from the loose use of these adjectives applied to "Big Business," and so—the electric company, actually small business, becomes the focal point of attack and is thrown into the foreground of a battle.

Background or Foreground?

Perhaps a homely illustration will set this before you more clearly. I do not know how many of you ever operated a hand plow, or whether you know a plow point from the plow share, or know the moulding board of a plow from its beam and clevis, but you could very well know what plow handles are for and what the double trees do. If you do know now or did know once—you'll know that it's the plow point and plowshare that take the licking in the field. Moulding boards and handles seldom wear out or are broken, yet they are the background for a good job of land plowing. We should be that way—we should be the background of the small city and village—not the foreground. We should help to guide the effects of the pointed efforts of the industrial life rather than to be the point

to strike every rock in the pathway of this city or village to its place in the *sun*.

"Close to the Lamp Socket"

There is another element in our relation with the small town that is very important. Several of your prior speakers have stated that this is not, first of all, a power sales problem. One of your program participants outlined the use of local and district managers who live close to the life of the people of the small city or village and have the confidence of the stockholders and management of small industry. These men are the first to have the problem of power for any new plant left in their hands. They are, of course, immediately backed up with any needed special engineering and sales help—*but,* it must never be forgotten that these local men are first brought into the problem because in that area *they are the company*. The resultant sale and service rendered are concluded (usually with help) through the confidence placed in that man *if* he is the right kind of man!

This, I believe, can be summed up in the framework of the general policy of "keeping the responsibility close to the lamp socket."

Now it has happened and does happen that some localized industry is considering two or more adjacent cities or villages, both served by the electric company. Perhaps one is investigated ahead of the other—then, indeed, all the wisdom of Solomon is needed. You have only one course: you must do a first-class job of minding your own business, which is that of serving both, while at the same time being sure you do not lose the business altogether!

Sales-Conscious Employees

No matter how we talk about this very desirable home-town attitude, it alone will not produce the confidence or results sought unless it is backed up by the same attitude on the part of everyone in the sales department. Now, unless the whole company is sales-conscious, it will not suffice just to have this viewpoint held by those technical men who finally must face up to the problem. The small village or city can be lost by someone just being *"too Darned Smart!"*

The electric company is given, after its request, the privilege of serving the citizens of a small town through a regulated monopoly grant. These people buy from great oil and gasoline firms, who are selling concentrated Btu's, through one of their own neighbors. The great banks serve the needs of the local cannery or the milk plant with participating loans through local bankers. The great manufacturers of various supplies used by this community serve these people through, and are represented by, the hardware merchant, the local lumber company, or local fuel company. All this business is conducted at the local level. It is easy to understand the thinking of these people when we show up and confuse the local industry by talking load factor, power factor, favorable diversity, off-peak, on-peak, prompt payment discount (which is usually a penalty instead of a discount). All these and more to confuse them. All they want is power to keep their plants operating, and people employed. Time enough later to get them confused, if you must, when you try to help them gain the better rate available to them through your own rules about which they have never heard, or cared.

Know Your Town

So much for the small local industry—but how about industry of state or national dimensions? That's a far different story—that's one which now is over the local level. Usually such firms seeking a location have already so closely defined their requirements that they now only wish to discuss availability of certain capacities—and here the electric company must supply not only that data, but also information on available sites of various sizes, on or off railroad siding, on or off through highways, on or off gas mains, and the other one hundred and one particulars peculiarly adaptable for their business in the area. The electric company often is sworn to secrecy for a time, to permit proper consideration. This usually means they may go to some other place—*not in your area*—but their confidence must not be broken.

All this adds up to the fact that we, the electric company, must have a generally well-known reputation for knowing a lot about our people, our town, their resources and ours. This must constantly be gathered and supplied by that fellow *"close to the lamp socket."*

When confidence rests that way, then it does not take the wisdom of Solomon to guide both the community and the industry to get together. This is always better when the electric company is the background of the village or city.

"This Is A Business"

It is my confirmed opinion that we of the electric industry have every right to be exceedingly proud of the accomplishments of our industry, in war and in peace. I believe we have been shoved around long enough. It's high time that we become more and more aware of the fact that *"This is a Business,"* and not a pampered, privileged group, operating a monopoly.

To me our industry seems much like a grocery or dime store business. We must first and always *have the goods at the right prices*. Second, we must wrap the goods up and deliver them in good condition, as reliably as possible. Third, we must constantly seek out the new needs of our customer that we can supply—and fourth, we must be humble. We must stay at our customer's level as we supply him. We have no divine right of kings, and we do need our customers as badly as they need us (and sometimes more so).

When we are the background of our towns, cities and villages, we become one of their resources—one that they need and one in which they must have extreme confidence.

Within that plan, we then must be thoroughly familiar with the kilowatt-hour requirements to dry or powder 100 pounds of milk; we must be able to help in electro-metallurgy in small cities; we must know cow population as well as densities of human population. All of these factors and hundreds more we must know—not always at the "lamp socket" level, but always so that level can be helped. Labor markets must be known — not as to whether they are higher or lower than in some other place, not whether they are organized or independent, but always as to quality and quantity.

Study Local Resources

Not many states have had the courage of this state of Minnesota to study their resources themselves—but this state did that very thing. In doing so, it found that, in this modern state, too much work was being done by human energy—on the farm, in the forests, the mines, and factories. This means that this area is looking for more industry for small

(*Continued on page* 16)

Let's Sell the National Electrical Code—The American Standard

By E. A. Brand
Niagara Mohawk Power Corporation

An address presented before the Eastern Section, International Association of Electrical Inspectors Meeting, Buffalo, N. Y., September 25, 1950.

IF I could pick a text for this dissertation, it might be the first sentence in the Introduction of the Code which reads, "The purpose of this Code is the practical safeguarding of persons and of buildings and their contents, from electrical hazards arising from the use of electricity for light, heat, power, radio, signalling and for other purposes." That is what we are going to talk about.

You may ask why the electric utilities, by one of which I am employed, are interested in the National Electrical Code, in customers' wiring and in customers' equipment. That is a fair question. It should have a fair answer.

The Customer's Investment

Let's see who really has an interest. First of all, of course, the customer does. Let's take an ordinary case. This chap has no particular ambitions to have a fully electrified home. His budget is modest. Probably he would have a refrigerator, a radio, a washer for his wife, an iron and some lamps as the minimum. That equipment, not of the deluxe type, would cost him about $400. If somebody does a selling job and he buys an electric range, not a deluxe job, but an automatic one, it would cost him about $240. This moderate customer therefore, starts out with an investment of $400 to $640. That doesn't take into account all of the electrical luxuries which you may have in your home, and which you don't consider luxuries. They are necessities.

Who else has an investment in that customer? The electric utility does. In this end of the state [N. Y.], the company which I represent, has 357,000 customers of all types, and we have invested for them $240 million in plant. The only purpose which that $240 million investment serves is to supply electricity to 357,000 electric customers. If my decimal point didn't slip, that works out to $675 per customer investment. That includes all customers from the steel mills and the grain mills and the large stores on down. Our average investment for residence and farm customers, of whom we have approximately 312,000, is in the neighborhood of $400 per customer. In the cities that may vary from $160 to $480 or $500 per customer. In the country, the investment for this chap whom I have just talked about, may be a thousand dollars on the part of the utility. So the utility has a direct financial stake in the customer.

Electric Utility and the Customer

Who else does? No one else has a permanent financial investment in the electrical customer. The manufacturer, the wholesaler, the dealer, the contractor, and the inspector have a temporary interest. They make their sale. They do their installation work. They collect their money, but they have no permanent investment in the customer. If they are called back three years later, that is fine. Otherwise, they just don't get any more business from that particular home. The utility company and the customer, however, go along together through the years.

So we have approximately a thousand dollar joint investment on the part of the customer and the utility. What is it worth? Absolutely nothing so far. The equipment represented by that investment has zero value unless the building wiring is installed.

It is that building wiring in which you men are interested. That is the interest of the IAEI and of the contractor. It is of interest to the utility also because every kilowatthour we sell has to pass over the customer's building wiring. We can't sell a kilowatthour except over such wiring. That wiring installation is the function of the National Electrical Code.

What does such wiring cost? Let us look at some figures. (See Table I.)

Residential Wiring Costs

These data were developed from a very excellent paper entitled "Residential Wiring Costs" which appeared in the May, 1948, issue of *Electrical Construction and Maintenance Magazine.*

Let's look at some of the figures. We see three groups: Sub-standard installa-

TABLE I—WIRING COSTS

	Sub-standard Installation 30 Amp. Service—4 Circuits 41 Outlets		Adequate Installation 100 Amp. Service—10 Circuits 129 Outlets	
	Cable	*Tubing*	*Cable*	*Tubing*
Material	$140	$190	$380	$510
Labor	110	150	300	400
Total	$250	$340	$680	$910

	Minimum Installation 60 Amp. Service—6 Circuits—85 Outlets	
	Cable	*Tubing*
Material	$222	$334
Labor	178	266
Total	$400	$600

tion with 30-ampere service, Adequate installation with 100-ampere service, and Minimum with 60-ampere service. You will notice that the number of circuits and outlets varies with the size of the service switch. What does the customer get? On the Sub-standard installation with a 30 ampere service, he receives 41 outlets. In cable, the installation would cost a total of $250. The cable figure is an average between non-metallic and armoured cable. If you want an electric metallic tubing job, that will cost $340. Of course, you will appreciate that these costs are as of two years ago. The level may have changed since that time, but the ratio between comparable costs probably has not changed.

Similarly, the Minimum installation with a 60 ampere service, in cable would be $400 and in tubing would be $600. The Adequate installation in cable is $680 and in tubing $910.

Decline of Unit Costs

That brings up an interesting point. In our business the investment is so great that the efforts of our operating and engineering groups are continually focused on reducing our costs and keeping the total investment down, at the same time maintaining voltage, giving first class service, and increasing the efficiency of our operations. For example, out on the River Road near Buffalo, we have a steam generating plant which has four 60-cycle, 100,000-kva units. The first of these was installed in the early 'thirties and it produces a kilowatthour for a pound of coal. The latest units produce a kilowatthour for 8/10 of a pound of coal. We have a new station under construction at Dunkirk. There each 100,000 kva unit will produce one kilowatthour for ¾ of a pound of coal. That doesn't sound like much difference. When a plant burns 35,000 tons of coal a week, however, a saving of 20 per cent will amount to between $2 and $3 million a year in coal costs. The manufacturers of wiring supplies, equipment and appliances operate on the same basis. They attempt to bring their unit costs down, to increase their volume and to give the customer more for his money.

Mass Production Efficiency

That is the good old American way of doing business. Mass production and production efficiency have made this country what it is.

What is the situation on building wiring? There we have a standard—the National Electrical Code. It is a standard approved by the American Standards Association for use throughout the entire country. Under the new system of revisions, it is being kept up to date annually. Formerly a lot of people groused that it took too long to change the Code. Now we have just the opposite. Some say the Code is moving too fast.

Of course, its regulations do not cover everything. They do not include good meter locations for utility, or how a utility can prevent or at least discourage its customers from utilizing unmetered energy. Those are minor items however. The utility companies as a rule have supplementary regulations covering them.

We have a good safety standard for building wiring installations. But the industry merely starts from there. Someone says, "There ought to be a law," so we have laws, lots of them. We have so many that the National Electrical Manufacturers Association sometime ago investigated and summarized electrical ordinances. NEMA surveyed 900 cities and found 766 wiring ordinances. Now an electrical ordinance calling for enforcement of the National Electrical Code is perfectly proper, but 541 or 70 per cent of the ordinances have special rules in addition to the National Electrical Code. They wouldn't accept the Code as formulated. One hundred twenty-five called for a specific edition of the National Electrical Code. In other words, unless those ordinances are kept up to date almost annually, they are now out of date. Seventeen completely rewrote the Code.

The Trend of Special Rules

It is interesting to see in which direction these special rules trend. Fifty-one of the ordinances had some special rules but permitted all types of interior wiring anywhere. Three hundred forty-two permitted all types of interior wiring but under certain conditions only. Two hundred forty-seven ordinances had special rules but permitted service cable for entrances. Two hundred seventy-six did not permit service cable for entrances. Thirty-five required 60-ampere service switches. Seven permitted only EMT or rigid conduit. Fifty, in addition to those seven, required metal enclosed interior wiring. Three hundred twelve had special rules on wiring installation design.

The special rules on wiring installation design are rather interesting. Here are some of the items encountered. Some cities permit only one instead of six sets of service entrance equipment. Others permit two only; others three; others four. Some cities limit the watts per circuit. Some change the demand factors, some change the range feeders, some require a separate circuit for oil burners or stokers or a separate circuit for a bell ringing transformer.

Local Ordinances

Apparently we have a very good American wiring standard, but it is just the starting point. With it as a basis a lot of cities go their own way. Are such special local rules really necessary? Apparently a lot of people want them, because there are so many of them. And probably everyone who has proposed and put into effect special local rules has felt justified in doing so. It is rather interesting to note that they do not agree among themselves.

Let's examine, for instance, a few of the special requirements of wiring in dwellings. Here an ordinance states that non-metallic cable is not permitted in dwellings over one family. Another ordinance indicates it should not be used in dwellings over two families, another over three families, still others not in dwellings over two stories. In another city it is not permitted in any frame buildings over two stories high. It is permitted concealed in existing buildings but not exposed, and so on. In other words, when we leave the standard and every city goes along for itself substituting local judgment for collective national judgment, then you encounter these inconsistencies between ordinances. The logical question is, "Is it necessary?"

Increase Unit Cost of Wiring

You will note that a majority of the special rules are restrictive and increase the unit cost of wiring. I am not talking here of total cost of the installation, but of the unit cost of wiring. The procedure of insisting on restrictive local rules with increased unit costs is exactly the opposite of what the electrical manufacturer and the electrical utility strive to accomplish.

I submit for your consideration that if this tremendous volume of special rules is necessary, then the National

Electrical Code should be revised. There is something drastically wrong with the Code if these restrictive ordinances are required.

I know what many of you are going to say, namely, that the National Electrical Code is a minimum standard only, that in your city you need more, and that the Introduction to the Code says it is a minimum.

Is The Code a Minimum Standard?

Let's examine the Introduction. Earlier I read the first sentence, that the purpose of the Code is the practical safeguarding of persons and of buildings and their contents, from electrical hazards arising from the use of electricity for light, heat, power, radio, signalling and for other purposes. But you say, "Go down to the third paragraph of the Introduction where it reads: 'The provisions of this Code constitute a minimum standard.'" You say, "This is just the minimum. We have to increase beyond that in our city because our conditions are different." Yet I wonder when we read on whether that is the proper conclusion. The Introduction continues: "Compliance therewith and proper maintenance will result in an installation reasonably free from hazard but not necessarily efficient or convenient."

"Reasonably free from hazard." I would like to ask if one of us were on the witness stand under oath, and were asked to testify regarding an electrical installation, how many would take an oath that an installation is free from hazard even though every circuit were meggered. We would probably not go beyond the "reasonably free."

Provides a Good Installation Standard

That expression ties in with the "practical safeguarding." From the standpoint of safety against fire and life hazards, the Code is not a minimum. It is an installation standard. It is a minimum standard on another score. The Introduction continues: "This Code is to be regarded neither as a design specification nor an instruction manual for untrained persons. Good service and satisfactory results will often require larger sizes of wire, more branch circuits, and better types of equipment than the minimum which is here specified."

From the standpoint of adequacy and convenience, it is a minimum, because adequacy cannot be legislated except by begging the question. On the next page of the Code we note that "This Code is intended to be suitable not only for the use of insurance inspectors but also for mandatory application by governmental bodies exercising legal jurisdiction over electrical installations." In other words, the entire intent of the Code is to be a reasonably good installation standard and to provide safety.

I believe that anyone who has been a member of the Code Committee for the past twenty years, as I have been, and has seen the development of the Code over that period, as he thinks back over what has been accomplished, the regulations that have been added, and the discussions that have taken place, will realize that the rules discussions in the Code Committee are not from the standpoint of what is the minimum that we can get by with, but what is good practice, what is safe. Take such things as the T-rated switches. You might say that a switch without the T-rating is minimum, but the Code calls for T-rating.

Not a Minimum from Standpoint of Safety

There are other items such as the watts per square foot requirements and the requirement as to the maximum number of conductors in outlet and junction boxes which was brought about by trouble in the field. Inspectors report field troubles back to the Committee, the Committee considers them and writes a new rule. That rule is written not as a minimum but as a working standard. The correction factors of Tables 1 and 2, the prohibiting of receptacles in theater dressing rooms —all of those indicate that the Code is not a minimum from the standpoint of safety. It is a good working standard.

Other people will talk about fire zones, and that in fire zones you will have to rule out certain types of wiring materials. And yet, if the building codes which apply to fire zones are adhered to, then the proper wiring method will follow almost automatically. Building codes restrict the construction materials that are permitted in certain locations in a city and in certain types of occupancies.

It is rather interesting that Code wiring methods rather group themselves with building materials requirements. Personally, I have never seen a fire resistant building, steel and concrete, wired with non-metallic cable. If, however, the building code permits frame or other combustible type building construction in a certain area, then why isn't the wiring material suitable for that type of construction just as acceptable. If the city fathers felt that the fire risks from tons and tons of wood construction weren't such that they would have to prohibit its use in a certain area, then why put restrictions on the wiring?

Classification of Wiring Materials

The National Electrical Code also classifies wiring materials by occupancies and states where they may be permitted. There is a whole chapter in the Code on that subject. Article 500, of course, is an excellent example. In the last year or two, there has been considerable feeling that Article 500 had gone too far in its requirements and that the safety standard set forth was too high. So, no matter how we look at it, we come back to the fact that the Code is a good, satisfactory, workable safety standard.

There are probably other basic misconceptions among certain groups in the Industry which may lead them to ask for special rules.

Let us go back to Table I and examine the labor component. In the Substandard installation we see that with cable, labor will receive $110; with tubing, labor receives $150. Now to the Minimum installation. Labor receives $178 with the cable installation. Isn't that the direction in which the industry should move? Let's carry it a step further. For the Minimum installation, with tubing, labor receives $266, but if we move up to the Adequate job designed in accordance with the Handbook of Residential Wiring Design, labor gets $300 for the cable job. Labor, as well as the contractor, is serving itself better by giving the customer something more for his money in additional copper and outlets.

Increase the Volume

Which is easier to sell, a Minimum installation in cable which gives the customer a 60-ampere service, 6 circuits, and 85 outlets, or a Sub-standard installation in tubing, which gives the customer a 30-ampere service, 4 circuits and 41 outlets? Let us reduce the unit cost of wiring to the customer. Let us increase the volume, and we will make better business for everyone. That is the American way of doing it.

It is easier to sell full wiring than

to sell wiring materials which add nothing in the customer's opinion and do not give him the additional outlets which he needs for the appliances which he will purchase over the years. Labor will still receive its share and actually a larger share. It is rather interesting that most of the new homes which are being built are being occupied by laboring people. There are more laboring people than anyone else in this country, and certainly, they will appreciate getting more for their money and a more useful installation.

The Appliance Field

We can venture into the appliance field for a moment to see what can happen there. A leading manufacturer of refrigerators has a 7.6 cu ft box which he sells for $229.75. That same manufacturer has an 8 cu ft refrigerator, the super-duper deluxe, and that sells for $399.75. Those two boxes have the same compressor. They carry the same five-year guarantee. The difference between them is salesmanship. They sell a lot of the super-dupers, but the smart buyer who has a certain amount of money to spend and needs additional refrigeration space might be better off paying $269.75 for a 9-cu ft or $299.75 for an 11-cu ft stripped-down refrigerator.

Use of Deluxe Materials

Let's look at another example. The same company makes the Cadillac and Chevrolet. If you were an automobile dealer in your city, which franchise would you rather have? A Chevrolet franchise is worth more than a Cadillac franchise. The difference again is salesmanship. No one says you have to buy a Cadillac if you want a car.

Wiring jobs with deluxe materials are wonderful if the customer can afford to pay for them, but we should *sell* them to him, not legislate him into them. Why shouldn't the customer be permitted to use everything appropriate in the National Electrical Code in his installation, keep the unit costs down and receive more useful wiring for the same expenditure? As a matter of fact, there is great question whether special wiring rules do not actually reduce the amount of permanent wiring installed and by so doing increase the amount of shoddy wiring which the customer installs—the lamp cord from the five and dime, etc.—thereby actually contributing to electrical hazards. Certainly an installation with 129 outlets initially is not going to have added the amount of lamp cord and homemade extensions that an installation of forty-one outlets will have.

Let's get back to selling the National Electrical Code. The motto of this Association is, "Let the Code decide." If we follow that motto, support the organizations which are attempting to sell wiring adequacy, and use the sales promotion materials at hand, such as the Handbook of Residential Wiring Design, we will find we do not need special rules in order to get business.

Let's keep the Code modern and up to date. Let's also keep wiring adequacy unhampered by special rules. Let's not cut our own long-term profits by increasing the cost but not giving anything extra. Let us sell useful and increased quantities of wiring.

Attention Accountants

Announcing the 1951 National Conference of Electric and Gas Utility Accountants which will be held at the Sherman Hotel, Chicago, Illinois, Monday, through Wednesday, April 23, 24, 25, 1951.

While the hotel has given assurance it will house the entire conference, early application will facilitate prompt assignment of desirable room accommodations.

WATCH THE NEXT ISSUE OF THE EEI BULLETIN FOR THE HIGHLIGHTS OF THE CONFERENCE PROGRAM.

RALPH H. SMITH, *Chairman*
Accounting Executive Committee
Edison Electric Institute

Better Copy Contest Deadline, February 1, 1951

THE Public Utilities Advertising Association is now sponsoring its twenty-eighth annual Better Copy Contest, the oldest contest run continuously by the advertising profession.

A total of 174 awards will be made to electric and gas companies for excellence in major phases of advertising including newspaper, radio, television, and motion pictures. Awards will also be presented for achievement in other forms of advertising such as direct mail, interior display, outdoor advertising, and employee publications. The prestige value of these awards is recognized throughout the industry.

Any business-managed electric or gas company may enter the competition which is not limited to members of the Public Utilities Advertising Association. Contest material must have been prepared either by a company or its advertising agency, and an agency may submit an entry in the name of its utility client. There is no entry fee.

Only material published between Jan. 1, 1950, and Dec. 31, 1950, will be considered for awards. With the exception of annual reports, the deadline for all entries is Feb. 1, 1951. The deadline for annual reports is April 1, 1951. Entries received after these dates will be disqualified.

Winners of the 1951 contest will be announced at the PUAA National Convention in New York on May 17 and 18 at the Hotel New Yorker. All the winning entries will be reproduced in the National Awards Book, which will also contain a complete summary of the competition. The book will be available at cost to Association members as well as non-members.

For the purposes of the contest, participating companies are divided into three groups according to size, and there are eighteen advertising classifications for which a first, second, and third place award will be presented to each group. In addition there are four classifications in which all companies, regardless of size, compete for awards.

Complete contest rules are listed in the *Rules Book of the PUAA Better Copy Contest* which can be obtained from rules committee chairman C. Fred Westin, Public Service Electric & Gas Co., Newark, N. J.

Goals for Business-Managed, Tax-Paying Electric Utilities

THE Goals for Business-Managed, Tax-Paying Electric Utilities appearing on this and the next page were prepared by the Platform Committee of the Electric Companies Public Information Program, under the Chairmanship of M. H. Frank, Vice President, Wisconsin Power and Light Company.

The "Goals" have been reproduced by the Wisconsin Power and Light Company in a handsome two-color, 6 in. x 7½ in. booklet with an appropriate Reddy Kilowatt illustration for each goal. The booklet is designed for distribution to employees, stockholders and other potentially interested persons.

Wisconsin Power and Light has generously offered to arrange for supply of the booklet in quantity, at printing cost, to companies authorized to use the copyright Reddy Kilowatt symbol. The booklet may be obtained with or without company name. Inquiries should be addressed to Mr. Frank at Madison, Wis.

Introduction

The business-managed, tax-paying electric companies of America have earned a reputation for quality service at constantly declining cost, for meeting all needs for power, and for being good citizens.

This record has not just happened. It is the result of wise policies directed at clearly defined goals. The aims of your local electric company are printed on the following pages. Read them and see what your company stands for.

1 Abundant Power and Good Service

In peace and in defense, to foresee the needs of each community for electricity, and to provide it at the lowest rates which will assure abundant power and satisfactory service.

Of all the users of electricity in the United States, about 34 million—over 80%—are served by business-managed companies. The rest are served by public power agencies.

Rural electrification—which was pioneered by the business-managed companies—has made electricity available to 93% of the nation's farms. As of December 31, 1949, business-managed companies served 2,407,046 farms. Rural Electrification Administration Co-operatives served 2,343,738 farms. Other public agencies served 243,916 farms.

While general living costs have risen over 70% in the last 10 years, the average price of electricity in the home has dropped 25%.

A fifteen billion dollar ($15,000,000,000) expansion program to December 31, 1953—financed by private investors—will increase the power supply to 80% above the World War II level by the end of 1953. During World War II, electric power was one of the few things never too little nor too late. If the government does not interfere with the industry's expansion program, the increasing supply should be ample for any foreseeable emergency.

2 Betterment of Communities

To continue to work loyally for the growth and betterment of each communuity served.

Business-managed electric companies traditionally take their full part in community citizenship—while supplying reliable, low-cost service.

Through adequate electric power and participation in civic affairs, they aid in the industrial development of their communities and bring better living to their customers. In addition, the investment, payrolls, and taxes of these companies are an important asset to every community which they serve.

3 Expansion Financed by Investors Rather Than by Taxpayers

To pay fair hire on investors' money so that people will invest in our industry's expansion, thus enabling us to meet the public's growing needs for electricity without adding to federal debt another government debt.

Approximately twenty billion dollars ($20,000,000,000) are invested in the plants and machinery of the business-managed electric companies.

More than 3,000,000 individual Americans, as well as insurance companies and savings banks, supplied this money by buying bonds and stocks. They are entitled to a fair return on their invested savings.

Our industry pays over eight-hundred million dollars ($800,000,000) in taxes each year, protecting the federal credit and helping to pay government operating expenses.

4 Efficient and Satisfied Employees

To attract and hold well-trained, competent employees by paying good wages and providing the best possible working conditions, thereby assuring high quality, reliable electric service.

Electric companies' employees number about 290,000. They are carefully selected, thoroughly trained, well-paid; they are alert and responsive to customers' needs; they have many opportunities for advancement.

Most of these companies provide employees with liberal pensions, job security, steady employment, life insurance programs, health-benefit programs, educational programs, safety programs, recreational programs, sick leave, and vacations with pay.

5 Fair Treatment for All Users of Electricity

To seek equal treatment of all users of electricity, and to that end, to work for the revision of laws, regulations and governmental practices that favor one user over another.

Federal policies that discriminate against customers of tax-paying utilities by providing special privileges for the non-tax-paying public power agencies are undemocratic and unsound.

These federal discriminatory policies work to destroy business-managed companies whose taxes pay part of the cost of federal projects.

These companies believe that cooperation between the industry and government—on availability and distribution of power, fair prices, and standard accounting practices—will benefit the nation. Should any savings result from purchase of government power, under appropriate regulation these savings would be passed on to the customers.

6 Equal Taxes for All Users of Electricity

To urge equality in taxes, so that the bills of electric utilities, whether business-managed or government-owned, will collect the same taxes from customers.

Hidden taxes are included in the price of all goods and services.

One-fifth of all money paid to the electric companies for electricity goes to pay taxes. On the other hand, government power projects are either entirely, or nearly, tax-free—and their customers do not pay their fair share to support government.

The companies believe that in fairness to all citizens, government-owned electric projects should pay taxes equal to the taxes imposed on private companies.

7 Wise Use of Natural Resources

To encourage efficient development of the nation's land, water and atomic resources for the benefit of all the people, rather than a few.

Flood prevention and control, navigation, water supply, reclamation and land and water conservation should be under government regulation.*

Where federal projects generate electricity, it should be available to all consumers on equal terms. Revenues from public power should cover costs of the electrical installation, all costs of production and a fair share of the cost of the dam and reservoir; and also make a return to the taxpayers in the form of tax payments.

Research in atomic power and other sources of energy should be continued.

A just federal power policy should be developed and administered for the greatest benefit of all citizens—consumers, taxpayers, labor, investors.

*For industry policy, write for "Principles for Sound Water Resources Development," Edison Electric Institute, 420 Lexington Avenue, New York 17, New York.

8 Safeguarding of American Freedom

To expose and fight whatever strikes at American freedom, wherever and whenever it may appear.

American freedom is safe as long as most of our citizens desire it, value it, and are willing to defend it.

The electric companies wish to conduct themselves and their businesses in such a way that all whom they serve and with whom they have contact may be kept conscious of the human and moral values on which this country is built.

To this end, they pledge that they will:

Fight for the maintenance of a free economy.

Maintain just and equitable relationships with customers, employees, stockholders, taxpayers and the public in general.

Oppose socialism, communism, and all other un-American "isms."

Be especially vigilant during the present national emergency.

Our American freedom—freedom with responsibility—has given us the most productive system ever devised.

The business-managed electric companies will use every means at hand to maintain that freedom.

Conclusion

The publication of the foregoing goals clearly indicates the dominant principles and purposes of the business-managed, tax-paying electric industry of America. We believe that our actions furnish convincing evidence of our good faith in striving to attain our announced objectives.

Industry in the Smaller Towns—Its Wherefore for Us

(*Continued from page* 10)

and large areas. It means that migrating industry has heard about this as well as the small cities and villages. It then means that we of the electric industry must keep our men at the local level, constantly urging their local people to be represented as well as representative.

It means more, much more. It means that we need men in the electric industry who can wrap up and deliver more and more of our "groceries"—to sell and serve to more and more of our communities. It means that by so doing our service can lift these burdens from human energy. It also means that studies, such as the current work of the Rural and Urban Development Committee (EEI), should take a large place in the background weaving of the tapestry that each of our towns and cities is capable of weaving. Then, since *this is a business,* let it not be the business of the point of the plow but rather the beam that furnishes the power to the moulding board.

So, therefore, let's remember: *Be* the background for industry, not the point of controversy. *Be* small business in your local town or city, not big business. *Be* prepared to help the company responsibility at the "lamp socket" level. *Be* sure to mind your own business, which is to serve all business. *Be* humble and at the same time proud of your opportunity as well as ability to serve. *Be* sure that the quality of the tapestry your town is weaving is high so that your part in it is also good. *Be* interested in many other matters in your town or city besides just your groceries. Know about its people, its highways, its schools, churches, and character.

Be sure that no one will be interested in you unless you, too, are interested in them!

This Critical Shortage of Engineers*

By S. C. Hollister

Dean, College of Engineering, Cornell University, Ithaca, N. Y.

From a Report of the Engineering Manpower Commission to the Engineers Joint Council, December 18, 1950.

OUR country is again obliged to arm in an effort to preserve peace, or to repulse attack if it should come. We are greatly outnumbered and our only chance of survival depends upon our ability to out-design, out-develop, out-produce, and outperform our opponents. In these efforts engineers are essential. But we are short of engineers. The reason is that there has been a falling off in enrollment in the engineering colleges, largely due to the widely held view that engineers are in over-supply. The shortage of engineers will become still more acute if they are called for military service and used in positions for which their training and experience are not mandatory.

The chart, Fig. 1, presents the essential factors in the outlook for the supply of engineering graduates. The lower curve shows that from 1942 through 1945 the country, through its mistaken manpower policy, all but stopped the operation of engineering education. That is why industry today so critically needs engineers with 5 to 10 years of experience.

The dotted line extended beyond 1950 shows the estimated number of graduates if the schools operate without any withdrawals by Selective Service. It represents the most optimistic production possible, at least until 1954, since all classes graduating up to that year are already enrolled.

Beyond 1950, a dotted line indicates the estimated freshman enrollment. This estimate, made before the Korean War, was based on peacetime expectancies. The chief reason why the 1950 enrollment did not reach the estimate is the widespread rumors that the engineering field was oversupplied.

The demand for engineers already shows tightness in all fields, especially in the aeronautical, chemical, electrical, and mechanical fields. Industry has absorbed the last two graduating classes of nearly 50,000 each and is hotly contending for the 30,000 that will graduate in 1951. Many are in ROTC programs and will go direct to military service; others who have draft postponements will be subject to call. On Aug. 3, the Secretary of Labor placed all branches of engineering on the list of critical occupations, and the shortage is becoming progressively more critical.

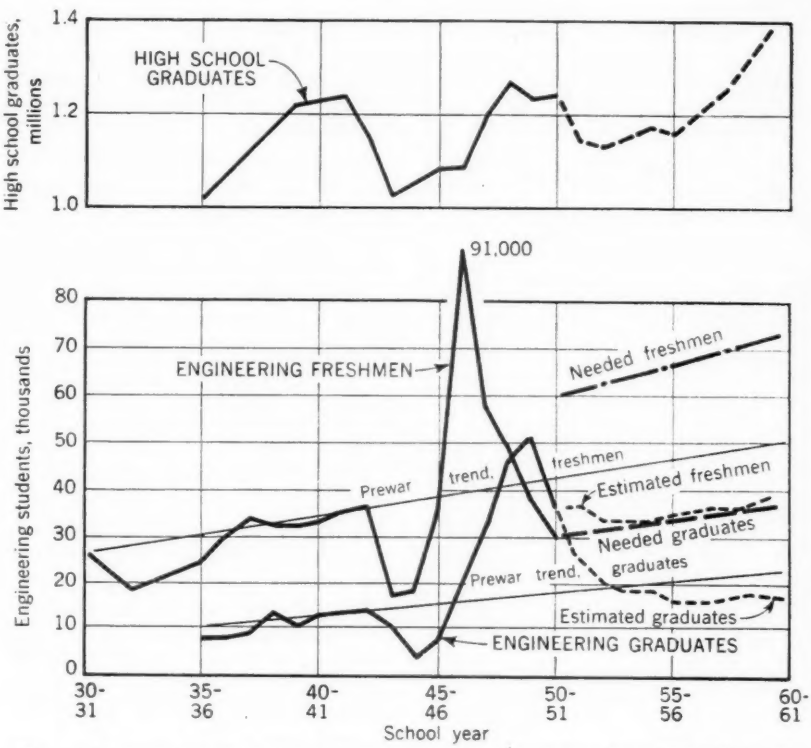

Fig. 1. Veteran benefit program brought unprecedented number of 91,000 freshmen into engineering colleges in 1946, but number has since fallen rapidly, to about half that estimated as essential by Dean Hollister.

In normal peacetime it is generally accepted that at least 20,000 engineering graduates are required annually. But after absorbing 50,000 in each of the last two years, industry still does not have all it needs. And the military needs have not yet been assessed. The minimum annual need appears to be not less than 30,000.

The question now is: How can we obtain 30,000 engineering graduates yearly? Since the mortality in the engineering colleges is about 50 per cent, an annual input of 60,000 freshmen would be required—about double the number that entered the schools this year. How can twice as many high school graduates be attracted to engineering schools? Since a dip of 10 per cent in the numbers graduating from high school is expected between 1950 and 1958, we cannot rely on an increase in the output of the high schools to solve the problem.

Supply Will Always Be Limited

Except for the war and immediate postwar years, the numbers entering engineering schools since 1935 range from 2.7 to 3.1 per cent of the total high school graduating classes. On the basis of an average high school output of

(*Continued on page* 19)

* Reprinted with permission from January, 1951 *Civil Engineering.*

Courtesy by the Kilowatt

"Nothing," says Coronet, "seems to be too big or too small to arouse the company's interest in people who need its help."

By Kent Sagendorph

IN the midst of a howling sleet storm, a big cross-country power line operated by Consumers Power Company crashed to earth near Jackson, Mich., under tons of ice. Lights went out in one section of the city. Within a few minutes the phone rang in the company's service office there.

"Help me!" sobbed a woman's voice. "My baby's dying! He's in an incubator. When the power went off, the machine turned cold. He's got to have warmth or he won't live!"

Don't Worry

The harassed dispatcher knew that every available man, even garage helpers and volunteers from other departments, was out fighting to restore service. But he answered: "Don't worry. We're on our way. We'll be there in a jiffy!"

In the company's gas department was a portable generator with enough capacity for this purpose. Calling off-duty employees, he located four volunteers within a few minutes. They rushed the generator to the suburban bungalow and stood by it in relays for 14 hours, until the baby was out of danger.

Consumers Power Company is an unusual organization. It is the largest utility in the nation whose service area does not include any big cities. It is a $400,000,000 corporation serving most of the lower peninsula of Michigan on the principle that each of its 900,000 customers is also a friend. The customers respond to this with a feeling of personal pride and kinship which is rare enough in the public dealings of any big corporation, and rarer still in the field of power and light companies.

Nothing Too Big or Too Small

Nothing seems to be too big, or too small, to arouse the company's interest in people who need its help. Only a few years ago, it developed special pumps to irrigate muck land to the precise degree necessary for a better celery crop. This was a great boon to celery growers in Muskegon County. Up near Flint, about the same time, a Consumers repair crew hauled a cow out of a 20-foot well with a winch.

Among its good-will projects is a series of free tourist camps and sportsmen's shelters in the fishing and hunting section of the state, where Consumers owns great stretches of land.

"This land is yours to enjoy," stated a Consumers invitation to sportsmen. "We've got a reforestation project pretty well along, to provide better cover for game. Come up during the season. See if you can't get a ten-point buck."

Everywhere throughout the 33,000 miles of Consumers' statewide network of power lines are similar invitations to the people of Michigan. In scores of little towns, Consumers' crews annually put up the community Christmas tree in the public square. Radio-telephone emergency trucks answer practically every fire alarm in most of the larger Michigan cities. This is just a form of quick service to the customer, in case the fire should damage electric lines.

Mutual Help Policy

This mutual-help policy has been maintained during the company's 40 years of corporate history. Consumers grew slowly from dozens of small companies until now it serves 56 counties, bringing electric and gas services to 1411 separate communities — townships, villages, and several good-sized cities, including Grand Rapids.

BACK around the turn of the century, Michigan was dotted with local, independent companies which began with electric street lights and a few streetcars. In Jackson, W. A. Foote and his brother rented a little store, set up a generator, and illuminated six street lights. That was back in 1886, and the same thing was beginning to take place in other cities.

Anton Hodenpyl and George Hardy became interested in a small company in Grand Rapids; John C. Weadock was associated with one in Bay City, and B. C. Cobb joined a Saginaw company. About 1900, some of these local companies were approached to put power into the small factories making wagons and farm equipment.

No. 1 State Enterprise

Before World War I, during the decade that saw Ford, Olds, Buick, Chevrolet, and Durant bring their automobile companies into quantity production, Michigan changed from an agricultural to an industrial area. Automobiles became the No. 1 enterprise of the state. In Saginaw, Flint, Bay City, Jackson, and Grand Rapids, the presidents of local power companies found they couldn't keep up with demand.

The Foote brothers and their associates, at Jackson, were first to see the need of a state-wide, inter-connected system. Hodenpyl and Hardy, at Grand Rapids, went into a huddle with the Footes and Cobb. Out of this came a new state-wide company with all its power at the disposal of any community that needed it in a hurry. They called it "Consumers," and adopted the motto: "We serve the people of Michigan."

These farseeing founders made Consumers a popular company. W. A. Foote handled management and finance. His brother, J. B. Foote, was the engineer who figured out how to load a cross-country power line with the then unheard-of pressure of 110,000 volts to reduce line losses on the long intercity network.

40 Years Ago

In Grand Rapids, Hodenpyl was the same kind of fellow—a townsman interested in progress. Cobb was a civic-minded businessman. In Jackson, lawyer Justin Whiting specialized in utility practice. That was 40 years ago. Now Whiting is president of Consumers.

These are the people who kept Con-

* Reprinted from January 1951 Coronet. Copyright 1950, by Esquire, Inc.

sumers attuned to the needs of the farmer and the small-town housewife, right along with the growing demands of the Buick Motor Company. For example, there was a man named David Hill, 81, dying of pneumonia in a secluded farmhouse near Grand Rapids. Doctors recommended a diathermy machine. But there was no power in the house; no electric lines.

Consumers had a choice—let him die, or run a line in immediately at the company's expense. They doubled the pole-setting crew and ran over a mile line to the farmhouse, at a cost of some $2,000. David Hill survived.

Fighting Blizzards

It's like that all over the state. In the blizzards of 1947, back roads were clogged with six-foot drifts. The company had its trucks out, fighting the drifts to keep service going. Near Flint, in a housing development, there were shivering people waiting for a transformer to arrive. Despite backbreaking efforts, the blizzard won. The trucks were halted. At that point the weary crews saw a farmer's bobsled gliding toward them.

"Load that transformer in here, boys," he said. "I'll get it to where it's going. You just stay in there and keep warm."

The farmer delivered the transformer and immediately some 50 homes thawed out as electrically operated furnace fans, pilots, and stokers promptly went into action.

Close ties with hundreds of thousands of customers, built up through friendly contacts, explain much of the company's success.

Postwar Expansion

Right after World War II, Consumers began building more generating plants, and hundreds more miles of line. Today, the company has generating capacity in excess of any foreseeable need. In fact, anybody who wants a little extra power can practically get it by picking up the phone.

This ample reserve of power has made it possible for Consumers to develop its rural market even beyond a point considered possible before the war. The company began supplying rural service as far back as 1924, with an experimental line near Parma, Mich.

In those days farmers couldn't always see the merit of power. Then Michigan State College joined Consumers and other organizations in rural demonstration tours, showing farmers how to use electric milkers, pumps, feed-cutters, brooders, and other devices. Farmers' wives exclaimed over electric washing machines, ranges, and radio sets.

Gradually the service was extended, but so slowly that by 1930 only a few thousand farms had power. H. J. Gallagher, Consumers Farm Service manager, began a long campaign to educate farmers in the labor-saving features of electricity. But the company had a lively battle with the government-financed Rural Electrification Administration during the Depression, and for some years prior to the war.

At the same time that REA's lines went up, Consumers went up even faster. Finally, Consumers won the battle of private enterprise versus government subsidy. Today, the company furnishes power to some 103,000 farms and 30,000 suburban homes — largest farm electrification project in the world accomplished without government help.

Consumers supplies current to 99 per cent of all the farms in its service area. It supplies another group indirectly—the members of an REA cooperative which buys its current from Consumers at wholesale prices.

Consumers was successful in this difficult campaign because their rates were well below REA's, though that agency paid no taxes. Now, Michigan farmers get Consumers' power at 2.26 cents per kilowatthour—a figure so low that Welfare State advocates probably think there's a trick in it.

The trick is simply ample reserves of power, good management, and satisfied customers. Right now, Consumers is one of America's best examples of a private utility succeeding brilliantly in competition with subsidized, tax-free government power. It is an encouraging note to friends of free enterprise and a blow to those people who think that the U. S. must follow the path of socialism.

This Critical Shortage of Engineers

(*Continued from page* 17)

1,200,000 boys and girls, 5 per cent would be required to produce 60,000 engineering freshmen, or about 10 per cent of the boys. There is some doubt whether the combined factors of aptitude, ability, interest, and financial means can be found in so high percentage. This brings home the fact that there is not, and cannot be developed, an inexhaustible supply of engineering talent. The supply will always be sharply limited.

Nevertheless it is essential that all avenues of information be utilized to acquaint high school principals, guidance counselors, and the high school students themselves with the shortage of engineers in all categories.

What is significant to industry in this picture, apart from the fact that young engineers will be in very short supply? Inter-company pirating will only add to the difficulties of staffing and robbing the colleges of faculty members will dry up the supply and reduce the quality of training. It will be essential for industry to re-examine the functions of engineering personnel and make certain that each engineer is being used in the most effective manner possible. Even competent supporting personnel will be tight. It will be necessary to begin in-service training of supporting personnel and to engage women as far as possible. The training programs of the last war will need to be re-established. None of these steps can be put off.

Government agencies, including the armed forces, must take cognizance of this situation. Plans must be developed for coordinating the engineering manpower needs of the Services and of industry. To assume that the need for engineers is exclusively military would be national suicide. Sound policies for deferment and the calling of reservists must be promulgated to maintain a balanced utilization.

The technical press reports that the Russians, in their current five-year plan, will have produced 150,000 engineering graduates by the end of 1950. This matches our own output for the same period. During the next five years, however, we will drop by one-third unless drastic action is taken to increase the supply of engineering freshmen and to continue training operations in full force.

Twenty EEI Resuscitation Medal Awards Honor Electric Company Employees' Resourcefulness-Teamwork-Devotion to Duty

EACH year the resourcefulness of electrical workers in the use of resuscitation results in the saving of many lives. The EEI Medal was created to honor men who by applying artificial respiration have revived victims suffering from electric shock, and in 1950 twenty medals were authorized for presentation to electric company employees. Since 1933, the year in which the Resuscitation Medal was first presented, more than 300 awards have been made.

The medal is symbolic of teamwork and devotion to duty. Moreover, it is a physical link with the historic past of the electric industry, for it contains copper from the original mains laid in New York City by Thomas Edison as part of the world's first underground system for the distribution of electric current.

Presented with each medal is a citation, signed by the President of the Institute, which describes the resuscitation for which an award is made. Certificates of Assistance are also given to men who rendered valuable aid in the resuscitation. In cases where it is judged that all members of a crew shared equally in the success of artificial respiration, miniature medals and Certificates of Assistance are given the entire crew.

Committee of Judges

Employees of all electric companies in the United States are eligible for these awards which are authorized throughout the year by the EEI Committee of Judges on the basis of facts submitted to the committee. The judges are E. J. Kreh, Duquesne Light Co., Pittsburgh, Pa.; R. H. Coleman, Consolidated Gas Electric Light & Power Co., Baltimore, Md., and E. C. Rue, Boston Edison Co., Boston, Mass.

Awards were authorized in 1950 for the company employees listed below:

J. J. ADAMIER, Pennsylvania Power & Light Co., Allentown, Pa.

EEI Resuscitation Medal

R. M. BARTLETT, Georgia Power Co., Atlanta, Ga.

A. R. CHAPMAN, Florida Power Corp., St. Petersburg, Fla.

P. CHASTAIN, Georgia Power Co., Atlanta, Ga.

F. J. FEIGH, Pennsylvania Electric Co., Altoona, Pa.

H. E. GENTRY, Georgia Power Co., Atlanta, Ga.

WILLIAM I. GILLISPIE, Southern California Edison Co., Los Angeles, Calif.

C. GUERRY, South Carolina Electric & Gas Co., Columbia, S. C.

C. H. HARDIN, Alabama Power Co., Birmingham, Ala.

C. E. JAMES, Alabama Power Co., Birmingham, Ala.

J. R. KENDIG, Pennsylvania Power & Light Co., Allentown, Pa.

C. F. LABMEIER, The Cincinnati Gas & Electric Co., Cincinnati, Ohio.

L. M. MOORE, Alabama Power Co., Birmingham, Ala.

A. H. PETIT, Central Illinois Electric & Gas Co., Rockford, Ill.

F. L. PREIZNER, Arizona Edison Co., Inc., Phoenix, Ariz.

J. L. RISHEL, Pennsylvania Power & Light Co., Allentown, Pa.

B. D. SHEPHERD, Consumers Power Co., Jackson, Mich.

ARNOLD F. SODERMAN, Western Massachusetts Electric Co., Greenfield, Mass.

W. H. SPANGLER, Appalachian Electric Power Co., Roanoke, Va.

G. C. WALKER, Alabama Power Co., Birmingham, Ala.

Summaries of events preliminary to eight awards presented in 1950 appear on the following pages.

These case histories, which are a tribute to the courage and quick action of company employees, point out dramatically the value of artificial respiration and the importance of safety precautions. Linemen, as well as generating station and substation workmen, who have never witnessed accidents involving electric shock may doubt the necessity of constant drills in resuscitation techniques. However, the significance of these techniques is amply demonstrated in the cases, each of which complements the excellent resuscitation training given electric company workers.

Negligence Causes Most Accidents

Emergency storm work often presents hazards which are beyond the control of linemen. Records show, however, that most accidents are the result of negligence under normal conditions. Although some of the accidents described were not due to carelessness, others, unfortunately, were caused by failure to observe safety regulations and to make full use of protective equipment. It is evident that negligence on the part of any worker not only endangers his own life but needlessly exposes his fellow workers to injury.

Brief statements concerning eight awards follow. Additional statements will appear in future issues of the BULLETIN.

GEORGE ZIEBOL (right) Northern States Power Company lineman, receives the EEI Medal for successful resuscitation presented by E. K. Thorgaard, Manager of the Company's St. Cloud Division, as C. A. Coutts, Director of Safety looks on.

Presentation of the EEI Medal is made to WILLIAM P. GOFORTH (left) by H. C. Thuerk, President of the New Jersey Power and Light Co., for the successful resuscitation of a fellow worker on June 24, 1949 at Succassuna, N. J.

GEORGE ZIEBOL

Northern States Power Company

Late in the morning of July 29, 1949, Lineman Einer Olson was at the top of a pole in the outskirts of Sauk Rapids, Minnesota, taking out slack in a high-voltage line. Olson's wrench slipped while loosening a 2-bolt clamp on a rural line dead end, and in trying to recover it he came in contact with a 2300-volt line. He was knocked unconscious and remained in contact with the live circuit.

Groundman Richard Trebtoske discovered Olson, who was hanging head downward with one of his hooks still in the pole. Trebtoske flagged a ride from a passing truck and quickly reached the rest of the crew working a quarter of a mile away.

As soon as Lineman George Ziebol heard Trebtoske shouting that Olson was hung on a live circuit, he shut off the current by pulling a fuse. The crew drove back to the scene of the accident in the company truck.

Ziebol climbed the pole from which Olson was hanging and administered pole top resuscitation. After five or six compressions Olson regained consciousness and was lowered to the ground by means of a line. Only three or four minutes had elapsed between the time of Olson's injury and the application of artificial respiration. However, he was bleeding badly from burns, and Groundman Francis Skillingstad applied a tourniquet to his left arm. Olson was then taken in the company truck to the hospital, where he was treated for shock and burns.

George Ziebol received an Edison Resuscitation Medal and Francis Skillingstad a Certificate of Assistance at a dinner given in their honor at St. Cloud, Minnesota. Northern States Power Co. officials C. A. Coutts, Director of Safety, and E. K. Thorgaard, Manager of the St. Cloud Division, presented the awards.

WILLIAM P. GOFORTH

New Jersey Power and Light Company

In Succassuna, New Jersey, on June 24, 1949, a line crew was preparing to lower a transformer to a new crossarm and to install a new transformer alongside the existing one. Chief Lineman Martin Stickel, in charge of the job, had covered all energized conductors with protective rubber. He was jumpering out a cut-out box and was attaching the jumper to the primary horizontal conductor when he slipped, perhaps because his hook struck a metal conduit. The jumper fell from his hand.

Lineman William Goforth, working below Stickel, saw the jumper swing free and looked up to find Stickel slumped unconscious in his belt. First, he instructed Apprentice Lineman John Drake, who was on the ground, to radio for help. He then climbed up under the injured lineman and began pole top resuscitation, which he continued for ten minutes before Stickel began to breathe without assistance. An ambulance from the Dover General Hospital arrived shortly after Stickel regained consciousness.

Drake helped Goforth tie a rope around Stickel who, in a state of shock, repeatedly untied the rope and refused to be lowered. Finally, however, he was quieted, guided to the ground, and driven in the ambulance to the hospital. Examination revealed that Stickel's only injury was a small burn on the inside of his right leg, and it is assumed that the falling jumper contacted him at this point. He was released from the hospital in five hours and returned to work the next day.

William Goforth received the Edison Medal at a ceremony held in the New Jersey Power and Light Company's auditorium in Dover. President H. C. Thuerk made the presentation which was witnessed by department chiefs, and members of the Dover Line Department. The company employee publication, *Live Wire*, featured an article on the presentation, as did all the Dover newspapers.

JOHN R. WOOD

Central Illinois Electric & Gas Co.

On the morning of May 18, 1949, a crew of the Illinois Electric & Gas Co. was removing old poles from the Cowling line north of Cowling, Ill. The crew was preparing to pull a transformer pole which stood in front of a farm residence, and George A. Kitchene, who was in charge of the operation, was backing the line truck into position. Linemen Ivan Hallam and John R. Wood were standing behind the truck, and Hallam grabbed the winch line on the truck derrick in order to fasten it around the pole.

Wood heard the noise of an arc and saw Hallam fall to the ground unconscious. Looking up, Wood saw that the truck derrick had contacted a 7200-volt primary transformer cut-out on an adjacent pole which had energized the winch line. Apprentice Lineman Clyde Hogue shouted at Kitchene to pull the truck ahead and then went to the farm house to telephone a doctor.

Having cleared Hallam's mouth of gravel, Wood began to administer artificial respiration. After two minutes of this treatment, Hallam regained consciousness momentarily, and Wood continued resuscitation for another three minutes before Hallam was fully conscious. Hogue carried the injured lineman to the shade of a tree, and the other members of the crew covered Hallam with old clothes and rubbed his legs and hands to restore circulation. Hallam was treated at the scene of the accident by a doctor and was then driven home where he was attended by his own physician. He lost nine days working time.

J. R. Wood was awarded the Edison Medal by H. E. Braunig, vice president of the Central Illinois Electric & Gas Co., at a banquet attended by employees and their wives. An account of the presentation was carried in the *Albion Journal-Register* on May 17, 1950.

DONALD M. HEALY

Pennsylvania Power and Light Company

Lineman Jesse Hopper was clearing power lines of tree branches on the morning of August 1, 1949, near Berwick, Pa. Hopper was about thirty feet up in a birch tree along the Harwood-Berwick 66-kv line trimming branches which Laborer Eugene Zajac was piling near the base of the tree. Lineman Donald Healy, in charge of the job, was

Pinning the EEI Medal to JOHN R. WOOD'S lapel, H. E. Braunig, vice president, Central Illinois Electric & Gas Co., makes formal presentation of the Award at a banquet in Mr. Wood's honor.

DONALD HEALY, recipient of the EEI Medal and Citation, is congratulated by Harry Ferguson, vice president in charge of operations of the Pennsylvania Power and Light Co., for the quick thinking and acting which won him the Award.

125 feet away ground-trimming along the Berwick-Briggsville 12-kv line. Because of dense woods and a steep hill, the radio-equipped truck could not be parked nearer than a quarter of a mile.

Suddenly Hopper cried out. Zajac looked up and saw the lineman hanging by his safety belt. Hopper had received a shock while cutting a limb which a sudden gust of wind had momentarily deflected into the line. Zajac shouted for help, and Healy ran to the scene of the accident. Climbing up under Hopper, who was unconscious and not breathing, Healy began pole-top resuscitation, and after about fifteen compressions Hopper started to breathe in irregular gasps. Meanwhile Zajac ran to the crest of the hill and yelled to the truck driver to summon an ambulance.

Zajac returned to the tree, helped lower the injured man to the ground, and continued resuscitation. When Healy climbed down from the tree, he replaced Zajac and applied artificial respiration until Hopper was breathing normally.

When the ambulance arrived, Zajac helped place Hopper on the stretcher and carry him back to the ambulance. Hopper was then driven to the Berwick Hospital where he was treated for burns and shock.

Donald Healy was given the Edison Medal at a dinner in his honor on August 13, 1950. The award was presented by Harry Ferguson, Company Vice President, in a ceremony presided over by R. W. Coffman, Berwick District Manager. Eugene Zajac, who left the employ of PP&L, was given the EEI Certificate of Assistance in Ohio on April 16, 1950, by Jesse Hopper. On August 13-14-15, 1950, the *Berwick Enterprise* carried articles dealing with Mr. Healy's award.

CHARLES HARVEY (left) receives the EEI Medal from F. G. Mayer, manager, Stillwater Division, Northern States Power Co., for a successful resuscitation which saved the life of a fellow lineman, Albert Shogren (right).

CHARLES HARVEY

Northern States Power Company

On March 29, 1949, Charles Harvey and Albert Shogren, journeymen linemen of the Northern States Power Co., were replacing a transformer on a pole in Stacy, Minnesota. Harvey was on the ground, and Shogren, who had climbed the pole, was standing under the transformer, preparing to disconnect the secondary taps. Harvey had already sent up a pair of rubber gloves to Shogren who had neglected to put them on and was not wearing them when the accident occurred.

Harvey, startled by a noise, looked up to find that Shogren had apparently slipped while attempting to change the position of his climbers. Shogren, his left hand on the secondary bushing and his right hand on the bottom of the cut-out, had been knocked out by a 7200-volt shock. Harvey jerked the hand line and freed Shogren of the secondary, thus breaking the injured lineman's contact with the electrical circuit. Then, yelling for help, Harvey put on his hooks and belt, climbed the pole, and lowered Shogren to the ground unassisted.

Several housewives who had witnessed the rescue from the windows of neighboring homes ran to the scene of the accident, and Harvey sent one of the women in search of a doctor. Shogren was not breathing, and Harvey began the prone pressure method of resuscitation which he continued for about twenty-three minutes until Shogren was breathing without assistance. A doctor arrived shortly afterward, and he drove Shogren to Forest Lake, Minnesota, for treatment. Shogren returned to work three months later.

This rescue is particularly noteworthy in that Harvey, at 61 years of age, was able to lower the 200 lb. Shogren to the ground and administer artificial respiration for over twenty minutes.

In recognition of his conspicuous service, the EEI Medal was presented to Harvey at a dinner held in his honor May 8, 1950,

C. M. Cavner (left) Operation Manager, Southern California Edison Co., presents the EEI Medal Citation to WILLIAM I. GILLISPIE, for a successful resuscitation for which Certificates of Assistance were also awarded to: (left to right) LLOYD J. WALKER, ALVIN T. TONET, JAMES WESTER and PAUL R. RANSOM.

which was attended by forty of his fellow employees, among them Albert Shogren. The award was made by Frank G. Mayer, Manager of the Stillwater Division of the Northern States Power Co.

WILLIAM I. GILLISPIE

Southern California Edison Company

Electricians George W. Mott and Paul R. Ransom were making a routine inspection of the 16-kv oil circuit breaker operating mechanisms in the switch garden at the Casitas Substation on July 31, 1950. Ransom had just made a telephone call to the switching center and was walking toward Mott, who was climbing his ladder. Suddenly Ransom was temporarily blinded by a flash, and Mott, his shirt in flames, fell to the ground. Mott, who had placed his ladder against an energized circuit breaker instead of the one cleared for work, was unconscious and not breathing.

William Gillispie, foreman of a construction crew working nearby, was the first to reach Mott. Gillispie extinguished the flames and then massaged the muscles of Mott's diaphragm which had been paralyzed by electrical shock. As soon as he had broken the paralysis, he began giving Mott artificial respiration. Gillispie was relieved by Laborer Alvin T. Tonet who was in turn relieved by Ransom.

Gillispie cleared the victim's mouth which had become clogged, and Ransom continued resuscitation for about five minutes until Mott began to gasp after each application of pressure. Artificial respiration was then carried on successively by construction crew members James Wester and Lloyd J. Walker until Mott could breathe without assistance. Other members of the crew massaged Mott's limbs and applied Carron oil to his burns. Then Ransom and Walker accompanied the injured man to a Ventura City hospital in an ambulance which had been summoned by the substation maintenance foreman.

Mott has since recovered completely from the accident and is now back at work.

William Gillispie received the Edison Medal at a ceremony held in the Alhambra, California, substation offices on Dec. 15, 1950. Certificates of Assistance were also awarded to Paul Ransom, Alvin Tonet, Lloyd Walker, and James Wester. Tonet and Wester, now serving in the armed forces, were given special leaves by their commanding officers in order to attend the ceremony. Operation manager C. M. Cavner made the presentations, and H. L. Rudolph, superintendent of substations, acted as master of ceremonies. Articles on the awards were featured in the Jan., 1951, edition of the company magazine, *Edison News*, and the Dec. 19, 1950 issue of the *Alhambra Post Advocate*.

A. F. SODERMAN (center), receives the EEI Medal and Citation from H. J. Cadwell, President, Western Massachusetts Electric Co., along with fellow workmen who were awarded Certificates of Assistance. Reading left to right: J. D. FRENETTE, R. P. KING, Mr. Soderman, Mr. Cadwell, and J. F. DOLAN.

JOHN E. FLEURY (holding Citation) has the EEI Medal pinned to his lapel by F. G. Harriman, safety manager, New England Power Service Co. Reading left to right are: Edwin A. Dow, NEPS Co. President, A. S. Dotsis, lineman who was resuscitated, Mr. Fleury, Mr. Harriman, C. J. Gooch, superintendent of line construction and Lester Gurney, Construction manager, New England Power Service Co.

ARNOLD F. SODERMAN

Western Massachusetts Electric Company

On the morning of July 3, 1950, in Ludlow, Mass., a line crew was replacing secondary mains on existing crossarm construction. First Class Lineman Everett Ensign had fastened his belt above the fire alarm crossarm under the secondary racks and was preparing to remove a house iron which supported a neutral service wire. Job foreman Joseph Metcalfe was walking toward the next pole when he heard Ensign's cry coupled with the noise of an arc. Ensign, in jockeying into a different position, had stepped on the fire alarm crossarm and raised his body so that the left side of his neck contacted the live primary and his left elbow the outrigger brace.

Metcalfe called for help. The accident was reported over the truck radio by driver Henry Dunbar; an ambulance was requested from the Ludlow Police; and a call was put in for a doctor.

First Class Lineman Arnold Soderman, the first to reach Ensign, who was unconscious and not breathing, immediately began pole top resuscitation with the assistance of First Class Lineman Raymond King. Ensign was breathing again within two or three minutes, and, while he was being lowered to the ground, resuscitation was continued with the help of Second Class Lineman John Dolan and Groundman John Frenette.

A doctor arrived fifteen minutes after the accident occurred, and after giving Ensign first aid treatment, ordered his removal to the Ludlow Hospital. An examination revealed a burn on the left side of Ensign's neck, a burn on his left elbow, and a bruise on the left side of his face. Ensign returned to work two weeks later.

The EEI Medal for successful resuscitation was awarded to Arnold Soderman, and Certificates of Assistance were given to Raymond King, John Frenette, and John Dolan at an informal ceremony held in the service building of the Western Massachusetts Electric Co. The awards were presented by Howard J. Cadwell, president of the company on Nov. 7, 1950. All the men had been previously honored for their prompt action by the American Red Cross, and an account of the rescue and presentations was carried in the Nov. 8th edition of the *Springfield Union*.

JOHN E. FLEURY

New England Power Service Company

Failure to use protective rubber on exposed conductors nearly resulted in the death of lineman Anthony Dotsis who was installing pins and insulators on a pole in Worcester, Mass.

On the morning of July 20, 1949, a line crew under the direction of foreman John Fleury was engaged in preparing rural poles for the running of a new line. Fleury was walking down the line when he observed Dotsis straddling an uncovered 2300 volt primary on an outrigger arm which supported three other primaries. There were no line hose, insulator hoods, or other rubber on any of these wires.

Fleury yelled to Dotsis: "We are not in so much of a hurry that we don't have to use rubber." There was line hose available at the foot of the pole, and Fleury, assuming that Dotsis would cover the wires before doing further work, walked back to the truck in order to pick up some hoods. Suddenly Fleury heard a cry, and, turning quickly, he caught sight of Dotsis falling to the ground.

Fleury ran to Dotsis, who was unconscious and not breathing, and immediately began artificial respiration. Another member of the crew ran to a nearby home where he telephoned for medical help. After from two to five minutes of prone pressure, Dotsis started gasping and thrashing violently, and he had to be held down forcibly until he became quiet. Dotsis' burns were treated with ointment, and Fleury continued resuscitation for a half hour until the patient breathed without assistance. A doctor arrived who determined that Dotsis had suffered no broken bones in his twenty-eight foot fall, and the linesman was then taken to the hospital in an ambulance.

It is assumed that Dotsis, after being cautioned by his foreman, had continued working and had in some manner bridged two primaries. Though he received thirteen burns, Dotsis suffered only mild shock and returned to work in two months.

John E. Fleury was given the EEI Medal at a dinner held in the Sheraton Hotel, Worcester, which was attended by representatives of the New England Power Service Company. The award was made by Safety Manager Frederick G. Harriman in a ceremony in which Anthony Dotsis took part. Accounts of the presentation were featured in *Contact,* the company magazine, and in the March 4, 1950, issue of the *Worcester Telegram*.

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Meter and Service Committee Meeting

By H. A. Brown, *Chairman*

THE thirty-ninth meeting of the Meter and Service Committee was held on Oct. 25, 26 and 27 at the Robert Treat Hotel in Newark, N. J. The meeting was conducted jointly with the AEIC Committee on Metering and Service Methods, and there was a total of 80 members and guests of the two committees in attendance. A wide variety of subjects was reported on at the meeting by various subcommittees. A part of the meeting was devoted to the presentation of new developments in meter design by the meter manufacturers.

The committee adopted a recommendation to request a modification in the "Code for Electricity Meters" by requiring an insulation test on meters of twice rated voltage plus 1000 volts with a minimum of 1500 volts.

In connection with corrosion prevention and protective coatings of meter and service equipment used out of doors, the problems arising due to shortages of zinc-coated steel and aluminum were discussed. F. A. Redding's subcommittee on this subject is to act as a clearing house for all members to receive and distribute information as to available substitute materials and finishes to combat corrosion of equipment.

Electrical Metermen's Handbook

A report on the recent publication of the newly revised "Electrical Metermen's Handbook" was made by R. B. Swallow. The Handbook has had wide distribution and many favorable reports have been received by EEI Headquarters.

F. E. Davis reported on the present situation with respect to service cable, with particular attention to the fact that the use of aluminum for service conductors is increasing. It was pointed out that the use of aluminum makes it necessary that attention be given to proper terminating fittings for joining with copper conductors.

A newly revised specification for watthour demand registers was discussed. This new specification is about ready for final review by NEMA in connection with its issuance as a joint standard.

There was some discussion as to the desirability of a standard nomenclature to designate meters, regardless of manufacture, as to their circuit applications. This subject was assigned for further study.

The Subcommittee on Special Problems is proceeding with tests of polyphase watthour meters in order to establish recommended standard methods for the testing of such meters. This subcommittee will also include thermal demand meters in its study.

A new specification for metering current transformers has been prepared and transmitted to NEMA for their review in connection with adopting it as a joint standard.

Floyd Salmon presented a recommended specification covering the spacing and circuit arrangement of meter test switches which was approved by Committee for publication as an EEI-AEIC standard.

The problem of setting up a method of effectively grounding bases of detachable meters was discussed. This will be given further study in conjunction with the meter manufacturers.

A summary of existing installation practices for meters and current transformers on large low-voltage installations is being prepared and will be made available in printed form to the member companies. A progress report was made on this subject.

A report was made on the present status as to the use of domestic circuit breakers. Because of the efforts of a number of utilities, the use of such breakers has been increasing on new installations to a considerable extent.

Meter Obsolescence

There was considerable discussion on meter obsolescence and the desirability of adopting programs for the gradual retirement from service of old types of meters, particularly with respect to the selection of factors on which such a program should be based.

The Committee was informed of the latest developments in wiring legislation having application to the installation of meters and services.

An index of State Commission Rules affecting meter testing which has been prepared by N. B. Phillips' subcommittee to cover all of the states in the country having such rules, was reviewed by the Committee. This index will be available shortly to members.

A report was presented to the Committee covering progress of a large number of utilities in connection with training and promotion of meter testers, with particular reference to the use of examinations in making promotions.

Prior to the close of the meeting, A. J. Allen announced that he was giving up his meter committee activities, brought about by his contemplated retirement from the Consolidated Edison Company which will take place in April, 1951. Mr. Allen has been a member of one or the other of the three National Meter Committees—NELA, EEI and AEIC—since 1921 and is a past chairman of the latter two committees. He has made substantial contributions to the metering art over the past 30 years and his activities in committee work have been a major factor in the adoption of standards and in the simplification of metering practices. Several members of the Committee responded to his remarks with tributes to the work which he has done.

The afternoon of Oct. 26 was devoted to a tour of the Westinghouse Corp.'s Meter and Instrument Factory in Newark.

The next meeting of the Meter and Service Committee, which will also be held jointly with the AEIC Metering and Service Methods Committee, will be held on May 7, 8 and 9, 1951, at the Huntington Hotel in Pasadena, Calif.

Recent EEI Publications

Protection of Electric Service From Sabotage and Enemy Action

EEI Publ. No. 50-14. A report to the Electric Power Survey Committee of the Edison Electric Institute by its Subcommittee on Continuity of Service Protection. 8 pages. Price: 20 cents per copy.

This report is intended to be a guide or check list of things to be considered in the formulation of plans covering feasible methods of electric service protection and the expansion of existing organization for emergency repairs and rehabilitation of service facilities which might be damaged by subversive efforts or direct enemy action.

A Lesson From History

Private Enterprise Regained

By Henry Hazlitt

in *Newsweek*

I AM indebted to Betty Knowles Hunt for sending me a column she contributed to The New Hampshire *Morning Union,* quoting from Governor Bradford's own history of the Plymouth Bay Colony over which he presided. It is a story that deserves to be far better known, particularly in an age that has acquired a mania for socialism and Communism, regards them as peculiarly "progressive" and entirely new, and is sure that they represent "the wave of the future."

Most of us have forgotten that when the Pilgrim Fathers landed on the shores of Massachusetts they established a Communist system. Out of their common product and storehouse they set up a system of rationing, though it came to "but a quarter of a pound of bread a day to each person." Even when harvest came, "it arose to but a little." A vicious circle seemed to set in. The people complained that they were too weak from want of food to tend the crops as they should. Deeply religious though they were, they took to stealing from each other. "So as it well appeared," writes Governor Bradford, "that famine must still insue the next year allso, if not some way prevented."

SO the colonists, he continues, "begane to thinke how they might raise as much corne as they could, and obtaine a better crope than they had done, that they might not still thus languish in miserie. At length [in 1623] after much debate of things, the Gov. (with the advise of the cheefest amongest them) gave way that they should set corne every man for his owne perticuler, and in that regard trust to them selves . . . And so assigned to every family a parcell of land . . .

"This had very good success; for it made all hands very industrious, so as much more corne was planted than other waise would have bene by any means the Gov. or any other could use, and saved him a great deall of trouble, and gave farr better contente.

"The women now wente willingly into the feild, and tooke their litle-ons with them to set corne, which before would aledg weakness, and inabilitie; whom to have compelled would have bene thought great tiranie and oppression.

"The experience that was had in this commone course and condition, tried sundrie years, and that amongst godly and sober men, may well evince the vanitie of that conceite of Platos and other ancients, applauded by some of later times;—that the taking away of propertie, and bringing in communitie into a comone wealth, would make them happy and florishing; as if they were wiser than God. For this comunitie (so farr as it was) was found to breed much confusion and discontent, and retard much imployment that would have been to their benefite and comforte.

"For the yong-men that were most able and fitte for labour and service did repine that they should spend their time and streingth to worke for other mens wives and children, with out any recompense. The strong, or man of parts, had no more in devission of victails and cloaths, than he that was weake and not able to doe a quarter the other could: this was thought injuestice . . .

"And for men's wives to be commanded to doe servise for other men, as dressing their meate, washing their cloaths, etc., they deemd it a kind of slaverie, neither could many husbands well brooke it . . .

"BY this time harvest was come, and instead of famine, now God gave them plentie, and the face of things was changed, to the rejoysing of the harts of many, for which they blessed God. And the effect of their particuler [private] planting was well seene, for all had, one way and other, pretty well to bring the year aboute, and some of the abler sorte and more industrious had to spare, and sell to others, so as any generall wante or famine hath not been amongest them since to this day."

The moral is too obvious to need elaboration.

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of the
ELECTRICAL
METERMEN'S
HANDBOOK

Completely Revised and Edited by the

HANDBOOK REVISION COMMITTEE
of the
METER AND SERVICE COMMITTEE

EDISON ELECTRIC INSTITUTE
420 Lexington Avenue
New York 17, New York

"Bake-Off" Contest Winners Receive Electric Ranges

AN EEI press conference, held to announce the Institute's new "Range of the Stars" program, played host to two housewives who were top prize winners in the Pillsbury Grand National Bake-Off Contest. The conference, which publicized the endorsement recently given electric ranges by eight Hollywood stars and their wives, had as its special guests Mrs. Bernard Derousseau of Rice Lake, Wis., and Mrs. Peter Wuebel of Redwood City, Cal. Both women had just come from an award luncheon, sponsored by the Pillsbury Company, at which they had received two new electric ranges and $30,000 in prize money.

For the last two years Pillsbury has conducted contests which select the 100 best recipes sent in to the company by housewives across the nation. Winners then participate in a Bake-Off, where they actually bake their recipes in person. Mrs. Derousseau and Mrs. Wuebel won top honors in this year's Bake-Off which was held in the Grand Ballroom of the Waldorf-Astoria.

Mrs. Wuebel told press representatives that she had been anxious to own an electric range for a long time. "Now I've got it," she continued. "It must be a wonderful cook, too, for it helped me win $25,000!"

EEI PUBLICATIONS AND SERVICE MATERIAL

(Prices include transportation in U. S. only. Please order by number shown before title. Standing Orders may be placed for a specified number of copies of reports of various committees as issued, to be shipped to one address.)

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* The "Proceedings" of Joint Accounting Conferences of Edison Electric Institute and American Gas Association include a great many reports, papers and studies on a wide variety of subjects of interest to electric and gas utility accountants. Most of these reports and papers are not available as individual documents, but copies of the proceedings listed above, or sections thereof, can still be obtained. A request for a specific report or paper known to have been presented at one of the above conferences can often be met.

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50-11—"Eighth Semi-Annual Electric Power Survey" 1950	$.30 per copy
50-8—Farm Electrical Equipment Handbook, 1950 (Transportation collect on quantity orders)	Single copies $2.25 2- 49 copies 2.10 50- 99 copies 2.00 100-999 copies 1.90 1000 or more 1.75
50-6—Principles for Sound Water Resources Development, 1950	$21.00 per thousand 3.00 per hundred
50-4—"Seventh Semi-Annual Electric Power Survey", 1950	$.30 per copy
R-17—Specifications for Impregnated Paper-Insulated, Lead-Covered Cable, "Solid" Type (8th Edition) AEIC, 1949	1.00 1.00
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PERSONALS

CLIFFORD B. MCMANUS, president of the Georgia Power Co., was appointed administrator of the Defense Power Administration by Secretary of the Interior Oscar L. Chapman last Dec. 22.

Mr. McManus, a director of the Edison Electric Institute and a vice president of the Southeastern Electric Exchange, graduated from the Alabama Polytechnic Institute in 1916 and became a student engineer with the Westinghouse Electric Corp. He then accepted a position with Alabama Power Co. and, except for service during World War I as a second lieutenant, remained with the company until he became manager of its northern and western divisions.

In 1927 he went to Atlanta and served first as superintendent of district operation for Georgia Power and later as operating manager and assistant to the company president. He was elected vice president, director of operations, and a member of the board in 1946. In the following year, he became president and in 1949 was elected president of Georgia Power's parent holding company, the Southern Co.

Promotion of Connecticut Light and Power Co. executives PAUL V. HAYDEN and STUART P. GILLESPIE has been announced by Sherman R. Knapp, executive vice president of the utility company. Mr. Hayden was named Director of Public Relations, and Mr. Gillespie will head CL&P's Research Department.

The appointments fill vacancies created by the recent retirement of Public Relations Vice President CHARLES J. ALLEN and Research Vice President E. J. AMBERG.

Mr. Hayden, a 1925 graduate of Brown University, joined CL&P in 1929 as industrial power engineer in Danielson. He had previously been employed by Westinghouse Electric Corp. In 1940 he was transferred to the company's Willimantic offices as industrial power engineer, and in 1947 became engineer for special assignments with the sales staff in Waterbury. Named industrial manager in 1948, he became executive assistant in the public relations department on Jan. 1, 1950.

He is a charter member of the Connecticut State Development Commission and is currently Chairman of the Commission's Industrial Advisory group. He is also a member of the Rural and Urban Development Committee of the Edison Electric Institute.

Mr. Gillespie became associated with the CL&P in 1945 shortly after his release from active duty as a lieutenant commander in the U. S. Navy. Prior to military service he had been employed as an engineer with the Jersey Central Power and Light Co.

He attended Stevens Institute of Technology in Hoboken, N. J. Mr. Gillespie became assistant research engineer in the company's research department in 1946 and was named research engineer in 1948. He is a member of the Research and Statistical Committee of the Electric Coordinating Council of New England.

Mr. Allen joined the company in 1917 as office manager and later served as auditor, executive assistant, assistant secretary and assistant treasurer. In 1929 he was made manager of the western division with headquarters at Waterbury and 10 years later became director of public relations. He was elected a vice resident in 1946. He is a past president of the Public Utilities Advertising Association.

Mr. Amberg, a native of Switzerland who came to this country in 1908, also joined the company in 1917. He worked for Baldwin Locomotive Works, was in hydroelectric development in Pennsylvania, and had charge of electrification design and reconstruction on the Stamford-New York section of the New York, New Haven & Hartford Railroad before going to Connecticut Light & Power. With the utility he has been electrical and then research engineer and has specialized in system development and economic analyses. He has been a vice president since 1946.

DAVID B. HYER, JR., former commercial manager of Florida Power Corporation, has been elected executive vice president of the Southern Colorado Power Co., Pueblo.

Mr. Hyer spent 24 years with Florida Power and its predecessor companies, is a graduate of Georgia Tech, and has held many important jobs for the company. He will serve under BEN F. FRENCH, who was recently elected president of Southern Colorado Power Co. Mr. French is also president of the Black Hills Power and Light Company at Rapid City, S. D.

ROBERT P. ANDREWS, new business manager of Tide Water Power Co., has been elected a vice president.

Mr. Andrews has been new business manager since 1949, and was merchandise manager prior to that. He has been handling all new customers and merchandise for the last three years.

His new duties will consist of taking direct supervision of industrial and agricultural development, the merchandising department and all division managers in the company.

A graduate in business administration, Mr. Andrews joined the Tide Water Power Co. staff after serving as lieutenant in the Navy.

DR. JESS H. DAVIS has been elected a member of the board of Niagara Mohawk Power Corp. to succeed the late HARRY S. LEWIS. STORRS M. BISHOP has been elected an assistant secretary of the corporation.

Dr. Davis is president of Clarkson College of Technology at Potsdam, N. Y., and president of the New York State Association of Engineering Colleges. He was graduated with a bachelor of science degree from Ohio State University, from which he also received his master's degree. In 1949 the degree of doctor of science was awarded to him by St. Lawrence University. Dr. Davis is a member of the Engineers Council for Professional Development, American Society of Mechanical Engineers, American Society for Engineer-Education, American Society of Testing Materials, and the Kentucky Society of Professional Engineers.

Mr. Bishop at present is resident manager for the Albany District of Niagara Mohawk. He was graduated from Union College with a bachelor of science degree. He became associated with the Operating Department of Niagara Mohawk at Schenectady in 1926 and has served as power engineer in Glens Falls. He served as resident manager at Port Henry and later in Hudson before going to Albany in 1943.

M. G. MILLER, assistant comptroller of West Penn Power Co., has been ap-

pointed assistant vice president of The West Penn Electric Co. of New York. Concurrently, the appointment of DONALD M. KAMMERT, as comptroller of West Penn Power Co., was announced.

West Penn Power, with headquarters at Pittsburgh, is the largest operating subsidiary of West Penn Electric.

Mr. Miller, with West Penn Power since March, 1922, is a Penn State graduate. He was made assistant comptroller in 1939 after 17 years in the company's accounting and statistical departments.

He is a member of the board of directors of the Insurance Buyers of Pittsburgh, a member of the Accounting Division Executive Committee of the Edison Electric Institute, and a member of the Controller's Institute of America.

Mr. Kammert, who has been assistant comptroller of The West Penn Electric Co., is a 1933 Accounting graduate of the University of Illinois. He spent eight years in various accounting duties with subsidiaries of the North American Co., including Illinois Power Company. In 1943 he joined American Water Works and Electric Co., then the parent company of West Penn Electric and West Penn Power. Five years later, he was made assistant comptroller of The West Penn Electric Co.

Mr. Kammert has been an assistant secretary and assistant treasurer of West Penn Power Company since 1946 in addition to his duties with West Penn Electric. He is a member of the General Accounting Committee of Edison Electric Institute.

JOSEPH E. THOMAS, West Penn Power Co. engineer, has retired after more than 42 years with the utility firm.

As chief engineer of power plants, he has supervised the installation of the many generating additions to West Penn's rapidly expanding system

In his early years, Mr. Thomas performed a variety of electrical engineering services for West Penn Railways and the infant West Penn Power Co. For the Power Company he successively filled the positions of system operator, superintendent of operation, and general superintendent of power. In these posts, he supervised various phases of construction operation and maintenance of power stations and major substations serving West Penn customers.

He graduated from Cornell University in 1908. He is a member of the American Institute of Electrical Engineers and for many years served on the Edison Electric Institute Prime Movers Committee.

ERWIN S. VAN NOSTRAND has been appointed as manager of system planning for The West Penn Electric Co. The position is a newly created one and covers activities of The West Penn Electric Co. and its subsidiaries, Monongahela Power Co., The Potomac Edison Co. and West Penn Power Co.

Mr. Van Nostrand, a graduate of Lehigh University, with a degree of mechanical engineer, has spent his entire business career in the public utility field. He was associated with the Philadelphia Electric Co. from 1925 to 1929, when he joined the Pennsylvania Power & Light Co. in its system operating department. From 1942 to 1945 he was with the War Production Board, in the Power Supply Section of the Office of War Utilities, and a regional coordinator of the Southwest Area for Power Coordination.

In 1945, Mr. Van Nostrand became operating superintendent of the Southwestern Public Service Co. He was with the company until December, 1950.

Mr. Van Nostrand is a member of the American Society of Mechanical Engineers and the American Institute of Electrical Engineers. He is also a member of the Edison Electric Institute's Electric Power Survey Committee.

EDWARD M. NAUGHTON has been appointed assistant general manager of Utah Power and Light Co. D. D. MOFFATT, JR., has been named assistant to the vice president and E. ALLAN HUNTER staff engineer. Mr. Naughton spent 10 years with Texas Power & Light Co. before joining UP&L in 1935. With the latter company he was first superintendent of steam-electric generating plants and later assistant to the vice president.

ADAM J. ALTHOUSE, assistant to the president of Metropolitan Edison Co., Reading, Pa., has retired after 43 years of service in the industry. In 1908, after two years' experience with other companies, Mr. Althouse became superintendent of Birdsboro Electric Co., which later became part of the Metropolitan system. In 1924 he served on a committee of three appointed by Pennsylvania Electric Association to study methods of distribution and rural extension for Ontario Hydro Commission. Their report later was used in determining rural distribution line policies of Pennsylvania's electric companies. He served on the executive committee of PEA and was elected vice president and in 1935 president. He was chairman of the Lehigh Valley section of AIEE and now is a life member.

PHILIP TORCHIO, JR., has been appointed assistant general manager of The Ohio Power Co.

Mr. Torchio had been assistant to the vice president and general manager of Ohio Power since April, 1949. For one year previous he had been assistant to the operating vice president of the American Gas & Electric Service Corp.

Prior to joining A. G. & E., he was associated with Consolidated Edison Co. of New York, Inc., for 16 years, serving with the company's generating, distribution, sales, purchasing and engineering departments.

DAVID N. MERRELL, residential sales manager for the northern division of Ohio Power Co., has been made manager of the Fostoria district of the company. Mr. Merrell has been with the utility in Tiffin for 20 years. He succeeds CHARLES E. CAMPBELL, retiring after 20 years as Fostoria district manager.

J. RILEY STOVER has been appointed chief electrical engineer, and GEORGE E. DANA, assistant chief electrical engineer of the New York State Electric & Gas Corp.

Mr. Stover will succeed WILLIAM W. PERRY, who is retiring after completing more than 37 years' service with public utilities in Pennsylvania and New York, and Mr. Dana, now relay engineer, will assume Mr. Stover's previous duties as assistant chief electrical engineer.

Both appointees are widely experienced in the utility field; Mr. Stover having been identified with the industry for nearly 30 years and Mr. Dana for more than 25 years.

Mr. Perry, who is completing more than 26 years' service with N. Y. S. E. & G., was given a testimonial dinner by his co-workers shortly after his retirement was announced. More than 250 emloyees and officials of the company joined in the tribute.

CLIFFORD R. BEARDSLEY, director of the Industrial and Economic Development Department of the Consolidated

Edison Co. of New York, Inc., has retired after twenty-seven years of service with the company.

Mr. Beardsley joined Brooklyn Edison Company (later merged into Consolidated Edison) in 1923 as superintendent of electrical construction. He transferred to Consolidated Edison where he became manager of the Contract Control and Inspection Department in 1938. Since 1946 he has headed the company's industrial and economic development activities.

During World War II Mr. Beardsley was loaned by Consolidated Edison to the New York City Administration for war service. He was Manager of War Contracts in the City's Commerce Department from 1942 to 1944. He was elected chairman of the Mayor's Business Advisory Committee in 1944 and served as Acting Commissioner of Commerce until he rejoined Consolidated Edison in 1946. Currently he has been serving as director of The Plan for Re-Zoning New York City.

Mr. Beardsley was graduated from Sheffield Scientific School, Yale Univeristy, in 1905 and prior to joining Brooklyn Edison Co. he did electrical engineering work for General Electric Co., United Illuminating Co., and Fred T. Ley and Co., Springfield, Mass.

Mr. Beardsley was chairman of the Accident Prevention Committee of NELA from 1928-30 and a member of both NELA and EEI Accident Prevention Committees from 1925 to 1938. He has also been active in committees of the American Institute of Electrical Engineers and American Standards Association.

JOHN KROHN, general stores manager of Consolidated Edison Co. of New York, Inc., since 1946, has retired after nearly 30 years of service with the system.

GEORGE A. MATTHEWS, inspection and equipment engineer of The Detroit Edison Co., has retired after 34 years' service. Mr. Matthews first went with the Connecticut Lighting and Railway Co., later became assistant superintendent, and then superintendent of electric distribution for the Rockland Light and Power Co. at Nyack, New York. For two years he was with the Western Coal and Mining Co., Jenny Lind, Ark. His start with The Detroit Edison Co. in 1916 was in the electrical construction field, later in maintenance, and finally in inspection and development. He is responsible for numerous improvements in high-voltage transformers and switchgear and has many inventions to his credit. The use by numerous utilities of switching equipment manufactured under his patents has improved continuity of service to the public at a reduced cost.

P. A. WILSON, assistant secretary of the Philadelphia Electric Co., has retired after fifty years of service with the company. He will be succeeded by HOWARD R. CRESSMAN.

Mr. Wilson has been in utility work for his entire business career and has occupied many important posts with Philadelphia Electric. He was also active in various civic and welfare organizations.

Mr. Cressman has been with Philadelphia Electric Co. since 1911.

WILLIAM F. HEARING, power sales engineer of the Atlantic City Electric Co., was installed as Governor of New Jersey District of Kiwanis International on January 17th. Delegations from 114 New Jersey Kiwanis Clubs, representing 6300 members, attended the installation ceremonies.

FRANK AUCHY, of the industrial power sales department of Philadelphia Electric Co., has been elected chairman of the Interstate Power Club of New York. He succeeds John B. Taylor, assistant vice president of Atlantic City (N. J.) Electric Co.

New vice chairman of the organization is S. L. CHAPIN, Public Service Electric & Gas Co. W. P. GRAHAM, Philadelphia Electric, was named secretary-treasurer. Directors are Mr. Taylor; JUSTIN H. AHRENS, Hartford Electric Light Co.; THOMAS C. ROE, Delaware Power & Light Co.; FRED I. SMITH, Jersey Central Power & Light Co.; and E. B. HASKELL, United Illuminating Co.

WILLIAM W. PERRY, chief engineer of N. Y. State Electric & Gas Corp., Binghamton, N. Y., is retiring after 26 years with the company. He has been in public utility work in New York and Pennsylvania for 27 years. In 1935 he became resident engineer for Gilbert Associates, Inc., consulting engineers on construction for New York State E&G. He was appointed chief electrical engineer of the utility in 1938 and became chief engineer in 1940.

CHARLES HENRY LEWIS, distribution engineer in the electric distribution department of Public Service Electric & Gas Co., Newark, N. J., has retired after more than 42 years of service. He left for Brazil where he will be consulting distribution engineer with Canadian Brazilian Services, Ltd. Mr. Lewis started with Public Service in 1908 as a cadet engineer and later served as field engineer, assistant superintendent, and superintendent in the Hudson division. He has been distribution engineer since 1926. Mr. Lewis helped organize the Distribution Engineers' Association and the Line Engineers' Association.

FRANK C. BROGAN, supervisor of design in the central engineering department of Ohio Edison Co. at Elyria, has joined Commonwealth Services, Inc., Jackson, Mich. He will be engaged in substation and structural design. He joined Ohio Public Service, now part of Ohio Edison, in 1924.

ROBERT E. TURNER, hydrographer at the Conowingo hydroelectric plant of Philadelphia Electric Co., has been awarded the American Society of Civil Engineers' Rickey Medal for achievement in the field of hydroelectric engineering. The prize was based on Turner's study of "Operation of the Conowingo Hydro Electric Plant." He has been in Philadelphia Electric's design, construction, and operating divisions since 1926 and was instrumental in getting a flood forecasting service set up by various governmental agencies concerned in stream flow with the assistance of private interests.

E. F. PERKINS has been appointed northern regional manager for the Pacific Coast Electrical Association with headquarters in San Francisco. He succeeds J. R. LAZARUS who has resigned. Mr. Perkins spent 14 years in the domestic sales division of Pacific Gas & Electric Co. and five years with Wesix Electric Heater Co. More recently he has been in the manufacturers' agency field.

DONALD E. BOOTES has been appointed home service director of Dayton Power & Light Co., succeeding MRS. KATHLEEN BERGDOLL, who has resigned. He will supervise the home service and home lighting staffs. Mr. Bootes joined the utility in 1941 and has recently been a supervisor in the accounting division.

CONVENTIONS AND MEETINGS

1951

JANUARY

11 EEI Residential Lighting Committee, Nela Park, Cleveland, Ohio.
12 BLBS Home Lighting Education Committee, Nela Park, Cleveland, Ohio.
12 PIP Mid-Atlantic Regional Meeting, Hotel Hershey, Hershey, Pa.
15-16 EEI Accident Prevention Committee, Lord Baltimore Hotel, Baltimore, Md.
15-16 EEI Commercial Cooking Committee, Potomac Electric Power Co. Conference Room, Washington, D. C.
15-17 Canadian Electrical Association, Engineering and Operating Division, Eastern Zone, General Brock Hotel, Niagara Falls, Ontario.
18 EEI Industrial Relations Committee, Detroit, Mich.
18-19 EEI Dealer Coordination Committee, Edgewater Beach Hotel, Chicago, Ill.
22-23 EEI Industrial Power & Heating Section, Hollenden Hotel, Cleveland, Ohio.
22-26 American Institute of Electrical Engineers, Annual Meeting, New York, N. Y.
24-25 Southern and Southwestern Electric Utilities Rural & Urban Development Conference, Roosevelt Hotel, New Orleans, La.
25-26 EEI Electric Water Heating Committee, EEI Headquarters, New York, N. Y.
25 PIP West North Central Meeting, Eau Claire Hotel, Eau Claire, Wis.
29 EEI Electric Kitchen & Laundry Committee, EEI Headquarters, New York, N. Y.
29-30 EEI Television Committee, Cleveland, Ohio.
29-30 Canadian Electrical Association, Sales Division, Eastern Zone, Windsor Hotel, Montreal, Que.

FEBRUARY

1-2 Pennsylvania Electric Association, Transmission and Distribution Committee, William Penn Hotel, Pittsburgh, Pa.
1-2 EEI-AGA Taxation Accounting Committees, Hotel Netherland Plaza, Cincinnati, Ohio.
7-8 EEI Commercial Lighting Committee, Hotel Statler, Detroit, Mich.
8-9 EEI Prime Movers Committee, Atlanta Biltmore Hotel, Atlanta, Ga.
8-9 Missouri Valley Electric Association, Industrial and Commercial Sales Conference, President Hotel, Kansas City, Mo.
9 PIP, Steering Committee Meeting, Hotel Biltmore, New York, N. Y.
12-13 EEI Electrical Equipment Committee, Hotel Cleveland, Cleveland, Ohio.
13-14 EEI Wiring & Specifications Committee, Sheraton-Gibson Hotel, Cincinnati, Ohio.
14 PIP Mid-Atlantic Regional Meeting—*meeting place to be announced.*
15 EEI Market Development & Electrical Applications Committee, EEI Headquarters, New York, N. Y.
15-16 EEI Home Service Committee, EEI Headquarters, New York, N. Y.
15-16 EEI Transmission and Distribution Committee, Atlanta Biltmore Hotel, Atlanta, Ga.
15-16 Pennsylvania Electric Association Relay Committee Meeting, Hotel Roosevelt, Pittsburgh, Penn.
15-16 Seventh Annual Adequate Wiring Conference, Sheraton-Gibson Hotel, Cincinnati, Ohio.
19-20 National Association of Purchasing Agents Mid-Winter Conference, Pittsburgh, Penn. (Press Headquarters, William Penn Hotel).
19-21 Canadian Electrical Association, General Division, Eastern Zone, Seigniory Club, Que.
21-24 American Society of Civil Engineers, Spring Convention, Houston, Tex.
27 North Central Electric Association, Central Station Conference, Hotel Nicollet, Minneapolis, Minn.

MARCH

8-9 Pennsylvania Electric Association, Prime Movers Committee, Berkshire Hotel, Reading, Pa.
12-15 NEMA Annual Meeting, Edgewater Beach Hotel, Chicago, Ill.
21-22—EEI Industrial Relations Committee, Joint with Personnel Practice Committee, AGA, and New England Utility Personnel Association, Boston, Mass.
29-30 Oklahoma Utilities Association, Annual Convention, Mayo Hotel, Tulsa, Okla.

APRIL

2-5 17th Annual EEI Sales Conference, Edgewater Beach Hotel, Chicago, Ill.
2-5 ASME Spring Meeting, Atlanta Biltmore Hotel, Atlanta, Ga.
4-6 Missouri Valley Electric Association, Engineering Conference, President Hotel, Kansas City, Mo.
10-11 Indiana Electric Association, Annual Young Men's Utility Conference, Ipalco Hall, Indianapolis, Ind.
15-18 Rocky Mountain Electrical League, Annual Spring Conference, Shirley Savoy Hotel, Denver, Colo.
16-18 EEI Transportation Committee jointly with AGA Motor Vehicle Committee, Peabody Hotel, Memphis, Tenn.
17-19 ASME, Process Industries Division Conference, Lord Baltimore Hotel, Baltimore, Md.
19 EEI Industrial Relations Committee, 420 Lexington Ave., New York, N. Y.
23-25 1951 Conference of Electric and Gas Utility Accountants, Hotel Sherman, Chicago, Ill.
25-27 Northwest Electric Light & Power Association, Engineering Section, Hotel Utah, Salt Lake City, Utah.
30-May 2—EEI purchasing & Stores Committee Annual Conference, Lord Baltimore Hotel, Baltimore, Md.

MAY

7-9 Missouri Association of Public Utilities, Annual Convention, Jefferson Hotel, St. Louis, Mo.
7-9 Northwest Electric Light & Power Association, Business Development Section, Multnomah Hotel, Portland, Ore.
7-9 Joint Meeting, EEI Meter & Service Committee and AEIC Committee on Metering & Service Methods, Huntington Hotel, Pasadena, Calif.
9 Commercial Electric Cooking Conference, Sheraton Hotel, Chicago, Ill.
16-18 Northwest Electric Light & Power Association, Personnel Section, Davenport Hotel, Spokane, Wash.
17-18 Missouri Valley Electric Association, Accounting Conference, President Hotel, Kansas City, Mo.
21-23 Pacific Coast Electrical Association, Annual Convention, Biltmore Hotel, Los Angeles, Calif.
28-29 EEI Electrical Equipment Committee, Hotel Biltmore, Los Angeles, Calif.

JUNE

4-7 Edison Electric Institute, Nineteenth Annual Convention, Denver, Colo.
11-15 ASME Semi-Annual Meeting, Royal York Hotel, Toronto, Can.
13-16 ASCE Summer Meeting, Louisville, Ky.
18-20 Canadian Electrical Association, Annual Convention, Algonquin Hotel, St. Andrews, New Brunswick.
24-27 Michigan Electric Light Association Annual Convention, Mackinac Island, Mich.
25-29 ASME Oil and Gas Power Division Conference, Baker Hotel, Dallas, Tex.

AUGUST

27-30 Illuminating Engineering Society, National Technical Conference, Hotel Shoreham, Washington, D. C.

SEPTEMBER

9-12 Rocky Mountain Electrical League Fall Convention, La Fonda Hotel, Santa Fe, N. M.
10-14 Joint ASME Industrial Instruments & Regulators Division, and Instrument Society of America, Exhibit and Conference, Houston, Texas.
20-21 PIP Second Annual Workshop Conference, Edgewater Beach Hotel, Chicago, Ill.
24-26 ASME Petroleum Mechanical Engineering Conference, Hotel Mayo, Tulsa, Okla.
25-28 ASME Fall Meeting, Hotel Radisson, Minneapolis, Minn.

EDISON ELECTRIC INSTITUTE OFFICERS AND COMMITTEES

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L. V. SUTTON, *President*.....Carolina Power and Light Co., Raleigh, N. C.
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K. B. CRUMB, *Treasurer*.....American Gas & Electric Service Corp., New York, N. Y.
MAE B. WOODS, *Secretary*.....420 Lexington Avenue, New York, N. Y.

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(Terms Expiring 1951)

J. M. BARRY,.....Alabama Power Co., Birmingham, Ala.
STUART COOPER .....Delaware Power and Light Co., Wilmington, Del.
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JOHN T. WARD.....Boston Edison Co., Boston, Mass.
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(Terms Expiring 1952)

W. C. BECKJORD.....The Cincinnati Gas & Electric Co., Cincinnati, Ohio
H. B. BRYANS.....Philadelphia Electric Co., Philadelphia, Pa.
H. C. CUMMINS.....Northern States Power Co., Minneapolis, Minn.
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(Terms Expiring 1953)

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E. W. DOEBLER.....Long Island Lighting Co., Mineola, L. I.
M. F. GILL.....Kansas Gas and Electric Co., Wichita, Kan.
N. B. GUSSETT.....Iowa Power and Light Co., Des Moines, Iowa
D. S. KENNEDY.....Oklahoma Gas and Electric Co., Oklahoma City, Okla.
L. M. KLAUBER.....San Diego Gas and Electric Co., San Diego, Cal.
R. H. KNOWLTON.....The Connecticut Light and Power Co., Hartford, Conn.
E. L. LINDSETH.....The Cleveland Electric Illuminating Co., Cleveland, Ohio
H. E. MEADE.....New Orleans Public Service Inc., New Orleans, La.
J. W. PARKER.....The Detroit Edison Co., Detroit, Mich.
H. T. PRITCHARD.....Indianapolis Power and Light Co., Indianapolis, Ind.
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H. C. THUERK.....New Jersey Power and Light Co., Dover, N. J.

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EDISON ELECTRIC INSTITUTE OFFICERS AND COMMITTEES

(Continued)

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EARLE J. MACHOLD.....Niagara Mohawk Power Corp., Syracuse, N. Y.
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Taxation Accounting, C. WIGAND.....Commonwealth Services, Inc., New York, N. Y.

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Sales Personnel and Training, R. J. MILLER.....The Cleveland Electric Illuminating Co., Cleveland, Ohio
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Commercial Sales Section, C. D. HOLLISTER.....Niagara Mohawk Power Corp., Albany, N. Y.
Farm Section, R. T. JONES.....Pennsylvania Power and Light Co., Allentown, Pa.
Industrial Power and Heating Section, ROBERT G. ELY.....Public Service Electric & Gas Co., Newark, N. J.
Residential Section, E. O. GEORGE.....The Detroit Edison Co., Detroit, Mich.

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Meter and Service, H. A. BROWN.....Rochester Gas & Electric Corp., Rochester, N. Y.
Prime Movers, F. P. FAIRCHILD.....Public Service Electric & Gas Co., Newark, N. J.
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Codes and Standards, D. C. LUCE.....Public Service Electric & Gas Co., Newark, N. J.
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Insurance, I. M. CARPENTER.....Ebasco Services Inc., New York, N. Y.
Legal, RALPH M. BESSE.....The Cleveland Electric Illuminating Co., Cleveland, Ohio
Membership, E. S. THOMPSON.....The West Penn Electric Co., Inc., New York, N. Y.
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Rate Research, HARRY I. MILLER.....Wisconsin Public Service Corp., Oshkosh, Wis.
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Statistical, ELDRED H. SCOTT.....The Detroit Edison Co., Detroit, Mich.
Transportation, S. G. PAGE.....Duquesne Light Co., Pittsburgh, Pa.